TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: OP 31000

REPORT TYPE: Subcategory

REVISION NUMBER: 2

TITLE: Operations/Operational

REASON FOR REVISION:

Reformat to conform with revision 4 of ECTG Program Manual and incorporation of SRP comments and inclusion of final corrective action plans.

PREPARATION

PREPARED BY: Charles V. Leal — SIGNATURE — 8/5/87 DATE

(Note: Evaluator List in Attachment I)

REVIEWS

PEER: [illegible] — SIGNATURE — 8/5/87 DATE

TAS: James E Worthy III — SIGNATURE — 8/7/87 DATE

CONCURRENCES

SIGNATURE	DATE		SIGNATURE*	DATE
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		SRP:	Jimmie R Joyce	8-7-87

APPROVED BY:

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ECSP MANAGER	DATE	MANAGER OF NUCLEAR POWER CONCURRENCE (FINAL REPORT ONLY)	DATE

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

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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

Operations/Operational

Subcategory Report 31000

I. SUMMARY OF ISSUES

The concerns in this subcategory relate to perceived problems with operator training, various aspects of operator performance, and operations procedures. This subcategory is comprised of 57 employee concerns addressing 30 issues. Twenty-two of these issues were found not to be substantiated. Two issues, chemical unloading procedures at WBN and coordination between operations and PSO Emergency Teams, were valid, but corrective action for the problems was initiated before the employee concern evaluation was undertaken. Another issue, fuse identification at SQN, was accurate but did not present a problem; however, a CATD was issued to track completion of related work. The issues of violating condensate demineralizer and two party verification procedures were also factually accurate but were not conditions that require corrective action.

II. SUMMARY OF FINDINGS

Through this evaluation process, several conditions were found to require corrective action. At SQN, workplans involving fuse identification and replacement are to be completed to simplify fuse replacement. Also at SQN, Operations Section Instruction Letters on QA training need to be reviewed and revised as necessary. BFN and SQN deficiencies were noted involving a lack of procedural control of temporary tygon tubing configurations. Deficiencies were found regarding training on clearance procedures and the Operations' configuration control program at WBN. Corrective Action Tracking Documents (CATDs) were issued to these plants on these deficiencies as they were found.

SQN line management committed to reviewing and either revising or deleting Operations Section Instruction Letters on QA training. SQN line management also reviewed applicable SOIs for tygon tubing and committed to revising an SOI regarding use of tygon tubing for laying up the CS heat exchanger. Also, a caution order will be added for isolation of tygon tubing on the EHC tank when the level is not being locally monitored. Finally, SQN maintenance personnel will apply proper tygon tubing controls in work requests. BFN line management also committed to revising a standard practice to institute proper controls on tygon tubing utilized for temporary level indication.

EXECUTIVE SUMMARY

Operations/Operational

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II. SUMMARY OF FINDINGS (con't)

At WBN, line management committed to developing and conducting training for craft/construction personnel on the plant clearance procedure. With respect to deficiencies noted in the operations configuration control program, WBN line management stated that the deficiencies had been corrected and that actions to prevent recurrence had been taken. A surveillance will be performed before licensing as part of WBN's operational readiness verifications to ensure the effectiveness of the actions to prevent recurrence.

III. SUMMARY OF COLLECTIVE SIGNIFICANCE

A collective assessment of the element-level findings led to the identification of two subcategory-level findings specific to WBN. These findings were determined to reflect adversely on management effectiveness and dealt with problems with operations procedures and with plant system status as follows:

a. There have been several instances of inadequate operational procedures and of noncompliance with operational procedures at WBN.

b. The operations configuration control program at WBN appears to be deficient.

IV. SUMMARY OF ROOT CAUSES

A review and analysis of the root causes for the element level findings taken collectively pointed to one significant root cause in the subcategory. This root cause dealt with the lack of adequate management control systems at WBN to ensure that operational procedures are complete and incorporate all technical requirements.

V. SUMMARY OF CORRECTIVE ACTION

1. SQN line management committed to reviewing and either revising or deleting Operations Section Instruction Letters on QA training. The recommendation to periodically review Section Instruction Letters was forwarded by SQN management to the Manager, Nuclear Procedure System for action.

EXECUTIVE SUMMARY

Operations/Operational

Subcategory Report 31000

V. SUMMARY OF CORRECTIVE ACTION (con't)

2. WBN line management committed to developing and conducting training for craft/construction personnel on the plant clearance procedures.

3. With respect to WBN operation configuration control program deficiencies were noted in a Corrective Action Report. It was determined that these problems were related to the implementation of system status control during hot functional testing. WBN line management stated that deficiencies had been corrected and that actions to prevent recurrence had been taken. A surveillance will be performed before licensing as part of WBN's operational readiness verification to ensure the effectiveness of the actions to prevent recurrence.

   The nature of the problem of system control status during hot functional testing currently limits the issue to WBN. In so much as Bellefonte's hot functional testing has been extensively deferred to the early 1990's, no additional corrective actions are deemed necessary at this time. |R2

4. With respect to tygon tubing procedural controls, WBN had made the necessary revision to a General Operating Instruction before the current evaluation. SQN line management reviewed applicable System Operating Instruction for tygon tubing and committed to revising an instruction, issuing a caution order, and reflecting proper tygon tubing controls in work requests. Browns Ferry Nuclear Plant line management also committed to revising a standard practice to institute proper controls on tygon tubing utilized for temporary level indication. BLN was not evaluated as this issue is relevant only at operational units. |R2

1.0 CHARACTERIZATION OF ISSUES

The 57 concerns that comprise the Operations/Operational Subcategory raise issues pertaining to operator training and performance and Operations procedures. The issues were combined into four higher-order groups called elements. In this section of the report, each element is presented with a brief overview of its issues.

1.1 Element 310.01 - Operations Programs/Procedures Inadequate

Issue 310.01 - Degreed Engineer SRO License Training Program Versus Experienced Operator Degree Program

IN-85-933-001
IN-85-933-004
IN-85-933-010
IN-85-933-016

This issue is based on four WBN concerns expressed by one concerned individual (CI) who disagrees with the practice of training degreed engineers for licensing as Senior Reactor Operators (SRO). The CI expressed the opinions that safety will be compromised because of inadequate plant experience and that the training program is inadequate. The CI feels the degree program for already experienced operations personnel should be continued and expanded in lieu of training degreed engineers.

Issue 310.01-2 - Rotating Shifts Causes Fatigue and Operator Errors

IN-85-363-001
IN-85-491-001
IN-85-745-001
IN-85-792-001
IN-85-989-003
IN-86-015-001
IN-86-227-001
WBP-86-023-001

The eight WBN concerns that comprise this issue represent a contention that frequent shift rotation and excessive work hours cause fatigue that results in degradation of performance and operator error.

Issue 310.01-3 - Operators Not Responsive to Fire Alarms

IN-86-247-001
WBP-86-014-001

Two WBN CIs question the handling of the fire alarm system.

Issue 310.01-4 - Plant Operators Do Not Take Jobs Seriously

IN-86-062-001

The WBN CI alleged that plant operators do not take their jobs seriously enough for others to have confidence in their ability to operate the plant.

Issue 310.01-5 - Valve Operation Control is Inadequate

IN-85-196-003
IN-85-948-004
IN-86-062-001
XX-85-022-001

Four CIs (3 at WBN and 1 at SQN) questioned the adequacy of valve control procedures and alleged careless valve manipulation by operators.

Issue 310.01-6 - Shift Staffing Inadequate for Emergencies

IN-86-291-008

The WBN CI was concerned that necessary help would not be readily available in the event of an emergency.

Issue 310.01-7 - Clearance Procedures for Electrical Work Inadequate

IN-85-448-002
IN-85-714-001 (transferred to SQP-86-010-001 by QTC)
SQP-86-010-001

Two CIs (1 at SQN and 1 at WBN) were concerned that clearance procedures do not adequately ensure that electrical equipment is cleared (made safe) before work is performed on it.

Issue 310.01-8 - Control Room Paperwork is Excessive

IN-85-140-001
IN-85-616-001

Two WBN CIs felt that paperwork detracts from control room operational duties.

Issue 310.01-9 - Corrective Action for Identified Problems is Inadequate

IN-85-478-001
IN-85-910-003
XX-85-067-001

Three CIs (Two at WBN and 1 at SQN) raised the issue that identified problems are not analyzed for root causes and proper corrective action is not taken.

Issue 310.01-10 - Coordination Between Operations and PSO Emergency Team is Lacking

IN-86-111-002

The WBN CI claimed that coordination between operations and the Public Safety Officer (PSO) emergency team is lacking and that poor communication and planning is evident. An example cited was that, during drills, different gates are open for different personnel, causing confusion and confrontation.

Issue 310.01-11 - Violation of Procedures Caused Contaminated Water Spill

SQP-85-003-001
SQP-85-003-002

The SQN CI (2 concerns) contends that procedures are being violated in an attempt to get work done as quickly as possible. An example cited was unauthorized operation of a valve by an electrician in the unit 2 Residual Heat Removal (RHR) heat exchanger room without a unit operator present. This valve operation caused a contaminated water spill. The CI implied that management attempted to cover up the incident.

Issue 310.01-12 - Operations Should Have Itemized Bulb and Fuse List

SQM-86-013-002

The SQN CI contends that operations should have an itemized list of the proper size, rating, and type of bulbs and fuses for all equipment under their control.

Issue 310.01-13 - Reactor Coolant Leak Caused by Management Desire to Break Time Records

XX-85-007-002

The SQN CI contends that a reactor coolant leak of 500-600 gallons was caused by management's desire to break time records.

1.2 Element 310.02 - Operator Qualifications

Issue 310.02-1 - Reactor Operator Selections Should Not Be Subject to Racial Quotas

EX-85-081-002

The WBN CI stated that reactor operators should be well qualified and that selections should not depend on government racial quotas.

Issue 310.02-2 - Operator Qualifications and Training Inadequate

IN-85-078-001
IN-85-289-001
IN-85-325-006
IN-85-400-003
IN-85-471-001
IN-85-844-001
IN-85-894-001

Seven WBN CIs were concerned that plant operators were not sufficiently knowledgeable or adequately trained for their positions. Several incidents of operator error were cited as evidence.

Issue 310.02-3 - Female Operators Unable to Perform Adequately

IN-85-400-003
IN-85-894-001

Two WBN CIs who questioned operator qualifications in general also made specific reference to female operators regarding lack of job knowledge and lack of sufficient physical strength to open and close isolation valves.

Issue 310.02-4 - Operator Quality Assurance (QA) Training Inadequate

IN-85-767-006

The WBN CI contended that plant operators are not adequately trained in, nor do they abide by, the QA requirements of plant procedures.

Issue 310.02-5 - Operator Training Programs Hurt by Rotating Trainers

IN-85-933-008

The WBN CI contends that the practice of rotating trainers hurts the operator training program because trainers are arbitrarily assigned and some are unwilling or unable to conduct effective training.

Issue 310.02-6 - Plant Operator Training May Be Inadequate

IN-86-209-013

The WBN CI perceives Shift Technical Advisor (STA) training to be inadequate and is therefore concerned that plant operator training may also be inadequate, since both types of training are conducted by the Power Operations Training Center (POTC).

Issue 310.02-7 - Shift Engineer Training in Electrical Station Operation is Inadequate

WI-85-060-001
XX-85-093-001
XX-85-093-002
XX-85-093-003

The CI (one CI filed a separate but identical concern for each nuclear site BLN, BFN, SQN and WBN) contends that shift engineers (SE) and assistant shift engineers (ASE) are not adequately trained in electrical station operation, which could result in excessive delay in restoring off-site power feed to the plant in the event of an emergency.

Issue 310.02-8 - Fire Brigade Training Inadequate

XX-85-048-002

The SQN CI contends that the Sequoyah Nuclear Plant (SQN) fire brigade's lack of training and experience will pose a fire protection problem at the plant. He/she feels that Public Safety Service should provide fire protection because most officers have attended the State Fire Training School.

1.3 Element 310.03 - Operations Procedures Need Clarification, Rewritten, and Used

Issue 310.03-1 - Chemical Unloading Procedures Inadequate

EX-85-028-001

The WBN CI expressed concern that procedures for unloading chemicals are inadequate as evidenced by a diesel oil spill and a near-miss accident involving sulfuric acid and hydrazine.

Issue 310.03-2 - Control of Plant System Status is Inadequate

IN-86-081-001

The WBN CI stated that control of plant system status is inadequate and presents a potential personnel hazard. The time frame cited was March/April 1985.

Issue 310.03-3 - Procedure Adherence and Valve Control Inadequate

IN-86-055-003

The WBN CI cites a hydrazine spill of 300 gallons in 1984 as an indication of inadequacies in plant operations, procedure adherence, control of valves, and system operation.

1.4 Element 310.04 - Procedure Violations

Issue 310.04-1 - Oil Spill Cleanup Not Per Procedure

IN-86-287-002

The WBN CI claimed that an oil spill in the number 5 diesel room in April 1985 was flushed into the retention pond and not cleaned up per procedure. The oil was allegedly released into the river.

Issue 310.04-2 - Test Clearance Given by Unqualified Person

IN-85-571-001

The WBN CI alleged that an unqualified shift engineer and a careless supervisor cleared a hydrogen system for hydro testing when it was not actually clear.

Issue 310.04-3 - Procedures for Condensate Demineralizer Violated

IN-85-183-001

The WBN CI alleged that operators are not following operating procedures for condensate demineralizers located in Turbine Building unit 1 at elevations 669 and 708.

Issue 310.04-4 - Steam Generator Chemistry Control Inadequate

IN-85-183-002

The WBN CI contended that operators are not following procedures for wet lay-up storage as regards steam generator chemistry control.

Issue 310.04-5 - Two-Party Verification Procedures Not Followed

IN-85-767-N07

The NRC-identified WBN concern states "TVA has told NRC procedures for two-party verification of valve line-ups exist, not following such a procedure."

Issue 310.04-6 - Supervisor Directed Personnel To Violate Technical Specifications and Procedures

IN-85-676-002

The WBN CI stated that a supervisor directed personnel to violate technical specifications and procedures by changing data.

To locate the issue in which a particular concern is evaluated, please consult the following attachments:

Attachment A, Subcategory Summary Table

Attachment B, List of Concerns by Element/Issue

2.0 EVALUATION PROCESS

2.1 General Methodology

The evaluation of this subcategory was conducted according to the Evaluation Plan for the Employee Concerns Task Group and the Evaluation Plan for the Operations Group. The concern case files were reviewed. Source documents were researched and interviews conducted in order to identify the requirements and criteria which

applied to the issues raised by the concerns. The issues were evaluated against the identified requirements and criteria to determine findings. A collective significance analysis was conducted; causes were indicated for negative findings; and corrective action for the negative findings was initiated or determined to have already been initiated.

2.2 Specific Methodology

Before the evaluation of any employee concern assigned to the Operations Category was begun, the concerns were grouped into logical subcategories and were further sorted into elements of related concerns. The concerns that are addressed in this subcategory report were determined to pertain to problems with Operations training procedure adequacy, procedure violations, conduct, and overtime/shiftwork issues.

Evaluations for the elements in this subcategory were performed and documented in accordance with an approved Operations Category Evaluation Plan by personnel who had been trained and qualified by TVA as evaluators. The evaluators were four experienced licensed Senior Reactor Operators. Two of the evaluators were independent contractors who have held Senior Reactor Operator Licenses. The evaluations were made for the specific circumstances and environment identified in the concerns, as well as for implications or applicability beyond the identified circumstances. These elements identified for a particular plant were examined for generic implication or applicability to additional structures, components, systems, features, or processes at that plant or at other TVA nuclear plants.

In conducting the element evaluations, the evaluators first reviewed the various concerns comprising the elements. Next, the evaluators reviewed applicable baseline requirement documents: TVA Area Plan, TVA Topical Report, Code of Federal Regulation 10 CFR 50, NUREGs and Regulatory Guides. TVA implementing documents reviewed were Technical Instructions (TI), Surveillance Instructions (SI), System Operating Instructions (SOI), Administrative Instructions (AI), General Operating Instructions (GOI), and Maintenance Instructions (MI). Other documents reviewed included QA Audit Reports, NSRS reports, SQN Generic Concern Task Force (GCTF) Reports, various Operations and Health Physics personnel journals, Pre-Op tests, Operations Section Letters, QTC Reports, Deficiency Reports (DR), Maintenance Requests (MR), Corrective Action Reports (CAR), Problem Identification Reports (PIR), Significant Condition Report (SCR) and memorandums.

Interviews with cognizant personnel were conducted for further evaluation input. Personnel interviewed in the Operations sections at WBN and SQN included Reactor Operators (RO), Assistant Shift Engineers (ASE), Shift Engineers (SE) and the Assistant Operations Supervisor at WBN. A General Foreman in SQN's Mechanical Maintenance Section, personnel from SQN's Compliance Section, Power System Operation (PSO) personnel, Power Operations Training Center (POTC) personnel, and WBN chemical personnel were also interviewed.

Next, the evaluators identified specific deficiencies found during the element investigations and analyzed them for causes at the element level. A final determination was made on whether or not each specific deficiency was safety-related. The evaluators documented their findings, specific deficiencies, and perceived root causes in accordance with the Operations Category Evaluation Plan.

3.0 FINDINGS

Note: Generic applicability statements are included for concerns which are classified as being potentially safety related or safety significant as denoted on Attachment A.

3.1 Element 310.01 - Operations Programs/Procedures Inadequate

Issue 310.01-1 - Degreed Engineer SRO Licensing Program Versus Experienced Operator Degree Program

WBN Evaluation

The WBN evaluation involved all four concerns involving SRO training. The SRO training program for any individual shall meet nuclear regulatory requirements NUREG-0737 and standard ANS 3.1 criteria along with the Corporate TVA Nuclear Plant Operator Training Program, 0202.05. All examinations administered to an SRO candidate are technically comparable regardless of the examinee background. There are two differences in the SRO training program between a degreed engineer and operations department unit operator with a Reactor Operator (RO) license. A degreed candidate for SRO license is not required to possess a RO license nor does he attend the basic academic courses required by operations personnel. Operations personnel attain a minimum of one year RO operations experience while performing RO duties.

All applicants for SRO licenses shall have four years of responsible power plant experience, (two years maximum fulfilled by technical training and two years shall be nuclear plant experience, with six months at the plant for which he seeks a license) which is obtained as a control room operator (fossil or nuclear) or as power plant staff engineer involved in the day-to-day activities of the facility commencing with the final year of construction. The one year RO experience requirement may be waived by the NRC in the event the candidate holds a four-year degree in engineering or applied science. The candidate will also participate in the equivalent of a cold license SRO training program, and will spend thirteen (13) weeks as an extra person on shift in training for SRO position. The candidate shall also have participated in reactor and plant operation up to at least 20-percent reactor operation.

NRC regulations require that SRO license applicants meet minimum requirements for training and experience as set forth in NRC regulations and standards which must be attested to by the Manager, ONP or his designated representative. There is a plant operating experience level difference between degreed engineer SRO candidates and Operations SRO candidates. However, the power plant is operated by a shift crew whose ultimate license responsibility is to maintain safe operations and protect the health and safety of the public. The NRC examines and licenses all candidates to the same criteria regardless of one's background. Anyone who can not demonstrate and perform to an 80 percent standard during training and licensing does not obtain an NRC operator's license.

Once degreed engineers receive an SRO license they are assigned to the Assistant Shift Engineer (ASE) position with an operating crew. The ASE, along with the Shift Engineer (SE), is in direct charge of plant operations and compliance with regulatory requirements. This is a portion of the team concept as required by Technical Specification shift crew composition. Another integral portion of the shift crew is the licensed Reactor Operator (RO) who has primary responsibility for the overall direction of all unit equipment operation and is in direct charge of all primary plant and ESF equipment operated from the control room. The SRO training received by degreed engineers is the same as that received by a RO and meets all regulatory requirements. Therefore, the concerns are not valid.

TVA continues to allow people with SRO licenses to obtain BS degrees. There have already been three WBN SROs who have completed the degree program with two more presently enrolled at UTC (University of Tennessee - Chattanooga) and two SROs attending classes at the POTC in preparation for entering college in the spring of 1987. The entire TVA program has 10 SROs who have completed the program with 14 more presently enrolled at UTC. TVA believes that this program mutually benefits the company and its employees.

SQN Evaluation

Concerns IN-85-933-001 and IN-85-933-010 were investigated adequately by a Generic Concern Task Force report dated April 26, 1986 entitled SRO/Engineers Lack Plant Experience. This committee conducted interviews with knowledgeable individuals and reviewed the following documents:

1. Manager Licensing and Development Program, June 1985.

2. NUREG 0737 Enclosure 1, Item A.

3. TVA Program Manual, PM 0202.05, Nuclear Plant Operator Training Program, March 1985.

An analysis of the above training documents, in conjunction with the personnel interviews, led the committee to conclude the following regarding the concerns:

1. TVA's program to license degreed engineers meets or exceeds federal licensing requirements.

2. The degreed engineers are required to pass the same NRC administered exam as nondegreed personnel, and

3. Plant management would not jeopardize plant safety by placing an SRO in a line supervisory function if his/her capabilities were in question.

The SQN Generic Concerns Task Force (GCTF) investigated the new training program, compared it to the current operator training program, and concluded that the requirements for successful completion exceeded the minimum requirements established by NRC. Based on the quality of the training program and the multiple examination process, the GCTF determined the concern to be not valid. This evaluation concurred with the GCTF determination.

Conclusion

At WBN and SQN, the issue could not be verified.

Generic Applicability

The issue has been evaluated generically for TVA and is not valid nor substantiated.

Issue 310.01-2 - Rotating Shifts Causes Fatigue and Operator Errors

WBN Evaluation

The evaluation of this issue centered on compliance to regulatory requirements and WBN approved procedures. Since WBN has not received an operating license, they are not currently required to abide by technical specifications. However, they must follow approved plant procedures. The following documents address shift rotation, work rules, and overtime:

- Technical Specifications section 6.2.2
- DPM 0903.04, Overtime
- WBN-AI-2.1, Authorities and Responsibilities for Safe Shutdown and Operation
- WBN-AI-2.4, Shift Manning and Recall of Plant Personnel
- OSLA-4, Overtime Distribution
- OSLA-7, Work Rules
- OSLA-45, Operations Shift Staffing

The technical specifications do not stipulate any operational configuration for a defueled power plant, which is WBN's current situation. Mode 6, which is REFUELING, requires a shift composition of one SE, one RO (UO), and one AUO. The current shift complement, which exceeds the minimum shift manning requirements of AI-2.4, Shift Manning, consists of one SE, one designated ASE, one UO, and eight AUOs. The shift fire brigade consists of one ASE, and four AUOs from the eight assigned to the shift crew.

AI-2.4 also stipulates that off-duty personnel shall be called to the plant, if available, rather than requiring a person to work two consecutive shifts. The SE has the authority and responsibility to man the shift to meet operating conditions as he/she deems necessary.

NRC Overtime Restrictions stipulated in NRC Generic Letters 82-02 and 83-14 apply to all plant personnel who perform safety-related functions for shutdown as well as operating plant conditions. The overtime limit guidelines are:

A. An individual should NOT work more than 16 hours straight, excluding shift turnover time.

B. An individual should NOT work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time.

C. A break of at least 8 hours should be allowed between work periods, including shift turnover time.

D. Except during extended shutdown periods the use of overtime should be considered on an individual basis and not for the entire staff on shift.

Any deviation from the above guidelines shall be authorized by the plant manager or his designee. Routine deviation from the above guidelines is not authorized.

The Operations supervisor shall establish and maintain a log book with pages similar to APPENDIX C in the shift engineer office. Deviations from the above guidelines shall be entered in this log including (1) date of the deviation, (2) name of affected individual, (3) type and reason for the deviation, and (4) name of the person approving the deviation. Information in this log older than one year may be destroyed.

To meet shift crew requirements, completion of tasks in progress, or emergency maintenance, persons may be required to work more than eight consecutive hours. Discussions with plant operations personnel and review of operations daily sign-in sheets which identify overtime shifts reveals only moderate overtime at this time. Note that at this time there is no startup or hot functional

testing being conducted. These test periods generally require longer operations staff work hours. A review of the past Corrective Action Reports (CAR) for 1985 and 1986 revealed no operational errors correlated to an individual working the first or third shifts or an individual working greater than eight hours in one day. The facts that the power plant is required to be manned 24 hours per day and an eight hour work schedule is established require a rotational multi-shift schedule to fulfill the manning requirements.

There are no regulatory or TVA requirements stipulating shift rotation frequency or duration; therefore, this aspect of the issue is a management prerogative. Three of the eight concerns for this issue are recommendations on shift rotation or schedule. There is currently a Control Room Design Review (CRDR) task force recommendation being considered by Operations Management at WBN which proposes an alternate shift rotation which addresses those concerns.

The recommendation is based upon shift rotation industry studies, which is all that's available to address those concerns. The concerns addressing operator errors due to fatigue, performance degradation and health hazards could not be substantiated because the evaluation could find no cases where operator errors are attributable to shift work rotation schedule.

Conclusion

The issue was found to be not valid.

Generic Applicability

This issue was evaluated at the site (WBN) of the safety related employee concern (WBP-86-023-001) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.01-3 - Operators Not Responsive to Fire Alarms

WBN Evaluation

In accordance with AOI-30, Plant Fires, one of the conditions required to determine whether a plant fire exists is an alarm on the Pyrotronics Console that is not resettable. If a spurious signal initiates the control room alarm, like welding operations, and the alarm can be immediately reset, operations would not be required to dispatch anyone to that location.

The Operations group has an Assistant Unit Operator (AUO) constantly manning the Pyrotronics fire station in the main control room. If the AUO should momentarily not be at the console, the Unit Operator (UO) assumes responsibility. The UO may not leave this control area until properly relieved, thus the fire alarm console has constant surveillance. The AUO has immediate information once an alarm is initiated as to whether the alarm is an actual fire or false alarm, as noted previously. He also can silence all local panel alarms from his operator's console. An alarm that indicates a real fire (i.e., non-resettable) receives immediate operator attention. An AUO is sent to the location of the alarm to investigate before the fire brigade is dispatched. Observation of the fire console AUO on three different shifts revealed they all pay close attention to their duties. The observed shifts were one day shift and two evening shifts. There appeared to be no discrepancies with respect to Operator annunciator/alarm response by either UOs in the control room or the AUO on the fire console during observation of three different shift crews. Close attention to detail was noted by this evaluator for all control room activities observed. The UO maintained judicious control over all events centered around his watchstation. The control room appearance was neat with no loud or unnecessary activities.

The UO has responsibility for all the AUOs on his shift and directs them accordingly. The control room atmosphere is as expected for a nuclear power plant.

During observation of three of the five shift operations crews during this investigation by a licensed SRO, there was no disregard for the fire alarm system. All operations on the fire pyrotronics console was conducted in accordance with AOI-30, Plant Fires procedure. Therefore, no serious fire threat exists at WBN due to operators failure to respond to fire alarms.

Conclusion

The issue was not validated.

Generic Applicability

The issue was evaluated at the site of the concerns (WBN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.01-4 - Plant Operators Do Not Take Jobs Seriously

WBN Evaluation

The CI alleged that plant operators do not take their jobs seriously enough for others to have confidence in their ability to operate the plant. This concern was not validated at WBN.

As noted above, the operational conduct of three different shift crews in the main control room was witnessed by an SRO evaluator, and general observations of operations personnel were made during all in-plant related investigations. Total time spent in-plant was approximately two weeks. During all observations the evaluator did not witness any activities which reflect that the operations staff do not take their job seriously. The control room conduct at this time with the UO serving as coordinator of AUO activity and conducting some testing was as expected for a nuclear facility.

The SALP report of 1985 also noted that the "main control room activities continued to be conducted in a professional manner." This evaluator noted no deterioration of the SALP observation. Operations Section Instruction Letter (OSLA), OSLA-29, provides guidance on the Discipline of Operations, and in-plant observation by the evaluator indicated this policy is followed by Operations personnel.

Conclusion

The issue cannot be verified as factual.

Issue 310.01-5 - Valve Operation Control is Inadequate

WBN Evaluation

This WBN issue involved concerns IN-85-196-003, IN-85-948-004, and IN-86-062-001.

The responsibility for plant systems valve control for a facility under construction is determined by whether a system has been transferred from DNC to NUC PR. These requirements are stipulated by NQAM, Volume I, Part I, Section 2 and Part II. Section 2 defines the requirements for the transfer of DNC responsibilities at various milestones as construction is completed and systems are transferred to Nuclear Services Branch (NSB) for operation and maintenance, and defines the interface policy during and following the transition from design and construction to operation of the

nuclear power plant. Before system transfer occurs, Construction has responsibility for the system. After transfer, the valve manipulations for entire systems are accomplished in accordance with valve checklists directed by the Shift Engineer (SE). Partial valve alignments are also directed by the SE or Unit Operator, both of which possess Operating licenses at WBN.

A complete review of the Plant Quality Assurance (PQA) Tracking and Reporting of Open Items System (TROI) regarding CAQs with root causes of personnel error for 1986 was conducted. Operations personnel were identified in one of the 33 CARs tabulated in this TROI listing. The one cited instance pertains to failure to complete an SI data package as required and there are no CARs identifying misoperations.

The allegation of the cooling pond repeatedly flooding due to inadequate valve operation control (concern IN-85-196-003) was investigated by NSRS in Report IN-85-196-003. The NSRS determined that diffuser valves had shut automatically as designed on low water flow pressure from the river. The pond water level had risen subsequently due to the shut valves. The NSRS recommendation on this finding had received a response from WBN management. The response states there are no required actions based on the fact that the ponds gradually increase from maximum influent flow and would not pose any danger to any workers in the pond vicinity. NSRS had accepted this response as adequate. The current evaluation concurred with the NSRS determination.

The concern (IN-85-948-004) regarding plant operators failing to check to see if a system is being worked before opening valves is not valid. All systems turned over to operations for their control and manipulation fall under the jurisdiction of the Clearance Program. Any work performed on systems must be cleared for equipment and personnel safety, and must have isolation boundaries established in accordance with clearance procedure, AI-2.12. Thus, checks are made via the clearance program before valves are opened.

This evaluation concluded that the issue of inadequate and careless valve control is not valid at WBN.

SQN Evaluation

Concern XX-85-022-001 describes an alleged incident where operators began to fill system piping before test work was completed. The concern implies that the system was tagged for the test work.

A review of the Unit Operator and Assistant Shift Engineers daily journals for the period of time of the concern for both units revealed no such incident as having occurred. On September 11, 1984, Surveillance Instruction SI 166.10 was performed on a unit. This instruction requires the removal of blind flanges and installation of test flanges to test check valve leak rates in system 63 (Safety Injection System). The SI requires that an isolation valve be closed during flange replacement. This work is very similar to that described in the concern. Interviews with a mechanical maintenance foreman and assistant shift engineers revealed that the flange removal work is conducted via a maintenance request. No tagging is involved. The cognizant ASE/UO is made aware of the work in progress by being required to sign and authorize the SI and MR for work to begin. Interviews with maintenance individuals involved in this particular SI revealed no problems which could have resulted in the complaint being filed. A further review of all Maintenance Requests and associated paperwork covering blind flange work conducted on both units during the period of time of the concern revealed no notes or entries detailing any such incident as the one described. A review of all September 1984 Hold Orders issued by both units revealed none issued specifically for RC Pump #2.

During interviews with Craft General Foremen and Operations personnel regarding the expressed concern, the following information relating to flange removal/replacement work was expressed by several individuals.

Flange removal and replacement work sometimes involves isolating sections of piping containing no vents or drains necessary for depressurizing or draining the piping before work being initiated. Piping layout configuration can sometimes cause piping sections to remain filled even when drains and vents are available. Foremen responsible for the work are notified by operations of such conditions before being placed on the clearance. Isolated piping, even when properly drained and vented, could possibly become refilled during maintenance due to leaking isolation valves. Also, as the clearance procedure clearly states, the presence of a clearance tag does not insure that equipment is tagged and ready for work to begin. Although no evidence exists to substantiate such an assumption, a failure of a maintenance worker to fully understand any or all points listed above could understandably have resulted in the filing of the concern as stated.

Based on the information contained in the concern as written, this investigation could neither confirm or disprove the occurrence of the described incident. No documented evidence could be found implicating operations personnel in a tagging discrepancy; therefore this concern is considered not valid.

Conclusion

At WBN and SQN, the issues were found to be not valid.

Generic Applicability

The concerns involving WBN and SQN were evaluated at the respective sites and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.01-6 - Shift Staffing Inadequate for Emergencies

WBN Evaluation

Evaluation of this issue involved review of minimum shift staffing requirements and emergency staffing levels as defined in the Radiological Emergency Plan (REP).

Minimum shift staffing requirements are defined by the Technical Specifications as outlined in the FSAR. This minimum staffing consists of the operations staff as listed previously in the report, two Chemistry Lab technicians, one health physicist, two health physics technicians, and the Shift Technical Advisor.

Upon determination by the Shift Engineer that an emergency exists of a magnitude requiring additional support, the REP would be initiated to obtain that support.

The WBN-REP Section 3.1 defines the requirements for supplemental staffing. This additional staffing is as follows:

1. Within approximately 30 minutes

    a. 1 Reactor Engineer

    b. 6 health physics technicians

    c. 1 electrician

    d. 1 instrument foreman

2. Within approximately 60 minutes

   a. 1 chem lab foreman

   b. 1 chem lab technician

   c. 6 health physics technicians

   d. 1 Electrical Maintenance Engineer

   e. 1 Mechanical Maintenance Engineer

   f. 1 Mechanical Foreman

   g. 1 electrician

   h. 1 site emergency director

   i. 1 CECC communicator

Other personnel will respond as required by the nature of the emergency.

WBN has not currently tested the response time of this staffing, as it is required once every five years. However, the staffing and availability is considered adequate to maintain the plant in a safe configuration during an emergency.

Conclusion

The concern was not validated.

Generic Applicability

The concern was evaluated at the site of the concern (WBN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.01-7 - Clearance Procedures for Electrical Work Inadequate

WBN Evaluation

Note: IN-85-714-001 was not evaluated at WBN since it is a SQN concern as determined by QTC, reference letter to Mr. Bruce Liefken, NSRS, from Mr. Owen Thero, QTC Program Manager, date February 24, 1986, stating IN-85-714-001 is transferred to concern number SQP-86-010-001, which was evaluated and documented in the SQN 310.01 report.

Concern IN-85-448-002 was generated at the time a security fence separated unit 1 and unit 2 due to the different access control levels needed on each unit. This investigation occurred at a time when the security fence access controls were removed and determined that the concern was not valid.

This evaluation analyzed the Nuclear Power clearance procedure/program for its adequacy in protecting craft electrical personnel while working on electrical equipment. The clearance procedure clearly states that it is the responsibility of the craft representative performing work on any piece of equipment to assure himself that the equipment is properly cleared and tagged before work is started. Nuclear Power Operations personnel ensure a safe working clearance is established by ensuring all disconnecting devices or breakers are opened, made inoperative, and tagged to ensure they will not be closed. The only devices required to be mechanically locked are gang or motor-operated disconnects or airbreak switches, which also must be visually checked to verify open status. These devices are not located within the confines of a plant security fence for unit separation.

There are some electrical controls and circuit breakers for unit 2 equipment located within the physical boundary of unit 1. When the security fence is installed, the only personnel allowed access are those with a security clearance. When work is performed on unit 2 equipment, it is deenergized by plant operations personnel and all control points are tagged in accordance with the plant clearance procedure.

The recent QA audits conducted on the clearance procedure revealed no major findings against the operations department for the program or program implementation. Control points are not locked except in those cases cited above. However, access to these control point locations is limited to people who have been trained in control point tag identification and meaning.

Supervision of the construction electrical craft stated that electricians have been issued test equipment to determine that the equipment is deenergized before work commences. In situations where tagged control points are behind security access fences, craft electricians can request that a craft supervisor, who has a security clearance, verify that specific clearances are correct. Thus, any craft electrician has a means to verify that clearance isolation and tagging is correct.

The CAR and DR program was reviewed for 1986 with respect to those written against inadequate clearances. There were several cited cases of clearance inadequacies. Sixteen (16) of those inadequacies pertained to "attention to detail" items where the clearance forms or hold order tags were not properly completed and were of no safety significance. One instance was noted where an incorrect component identification was made which has the potential for safety significance.

The recent review of the past year's quarterly audits on the clearance program reveals eleven (11) instances of "attention to detail" problems and one other situation where an incorrect component identification was described on the clearance sheet. These "attention to detail" cases have been corrected by attempting to make all operators more safety conscious during clearance activities by conducting an "attention to detail" classroom lecture. There have been no wrong component descriptions cited since completion of the class, only minor nonsafety administrative errors.

The recent QA surveys conducted on the clearance procedure program revealed no major safety discrepancies; therefore, this issue is not valid. There are no electrical devices that the craft electricians are required to work on that are required to be locked. The electricians have test equipment to physically verify equipment deenergization and access to electrical supervisors to visually inspect the control point tagging. They also may request an escort into the security area to personally verify isolation and tagging.

More information on the clearance program is available in Subcategory Report 30900.

SQN Evaluation

Concern SQP-86-010-001 references an alleged tagging incident which occurred during the early construction phase of Sequoyah Nuclear Plant. The main point of concern appears to be dissatisfaction with the method utilized to clear high voltage lines for work.

A review of the Clearance Procedure Administrative Instruction AI-3 was conducted to determine current clearance methods covering such work. In particular, AI-3 part 5.2.1.2 specifically applies to conditions referred to in the concern. All Motor Operated Disconnects (MODs) and Airbreak Switches are required to be mechanically locked in the open position and visually checked to ensure a positive opening in the circuit before a clearance is issued. AI-3 section 10 gives guidance for placing safety grounds to further insure safe working conditions during such conditions. Part 5.3.4 includes a note requiring the individual receiving the clearance to insure himself all equipment is properly isolated and tagged before allowing work to proceed. While the evaluation was unable to reveal any facts directly related to the described 1973 incident, it did conclude that present instructions covering the clearance procedure are effective in insuring safe working conditions on equipment. All assistant shift engineers, shift engineers, and plant maintenance personnel interviewed demonstrated familiarity with AI-3. Sufficient safeguards are presently required by AI-3 so as to invalidate any necessity to allow a maintenance worker to personally retain a key to ensure his safety.

The investigation could not validate the concern. Present procedures provide adequate safety for work involving high voltage lines. The procedure was reviewed and found to be adequate. The procedure does require disconnects and air break switches to be both locked and tagged in the open position. No further action is necessary regarding this concern.

Conclusion

At WBN and SQN, the issue was not validated.

Issue 310.01-8 - Control Room Paperwork is Excessive

WBN Evaluation

NSRS conducted the initial investigation on these two concerns via Report No. I-85-211-WBN. The findings from their report are as follows:

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

A. Routine paperwork as described by interviewees consisted of the following:

1. Daily journal entries.

2. System status file/configuration log updates.

3. Review of daily, weekly, and other periodic surveillance instructions performed by lower grade operators.

4. Review of Assistant Unit Operator routine log sheets.

5. Actual performance and documentation of Unit Operator performed surveillance instruction procedures.

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

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

2. Operating Section Letter - 2, "Maintaining Cognizance of Operational Status."

3. Operating Section Letter - 41, "Operations Narrative Log Books."

4. Surveillance Instruction - 2, "Shift and Daily Surveillance Log" (requirements for operator signoff reviews).

B. Interviews with licensed and unlicensed unit operators resulted in the following information:

- Estimates of the time required for performance of routine paperwork varied from 30 minutes to 8 hours and was dependent on the shift worked and the plant conditions.

- No meaningful amount of paperwork could be delegated to any group other than Operations. An extra (third) Unit Operator was needed only during sporadic heavy workload periods.

- The paperwork load which consisted of surveillance instructions performance for Emergency Core Cooling Systems (ECCS) equipment and valve stroke timing tests on safety-related equipment appeared to be the major items that diverted the unit operator's attention from the rest of the main control room boards. It was stated, however, that no one other than another qualified operator could perform this function on a control room panel.

C. Interviews with Operations Management resulted in the following information:

- A third Unit Operator would normally be used on the control room functions during unit startup conditions up to approximately 20 percent power.

- The Shift Engineer has the authority to call in and use operations personnel as necessary for shift manning requirements.

- Surveillance tests which were performed on unit equipment in the control room but outside the "horseshoe" area of the control boards involving long-term testing (e.g., Diesel Generator Load Testing) were normally performed by a third Unit Operator if the workload was heavy or test performance was scheduled on the day shift.

- Surveillance testing performed in the control room by the Unit Operator helped him in maintaining an awareness of unit conditions.

Interviews with a Shift Engineer and a Unit Operator revealed they are performing on the average two surveillances per day which is not detracting from the shift's maintaining of the plant. This paperwork requirement is expected and is a normal requirement for licensed operators.

Operations has AI-2.4 for shift manning and recall of personnel to plant which states, "The SE has the authority and responsibility to man the shift to meet operating conditions as he/she deems necessary."

The conclusion from the NSRS report was that the concerns were not substantiated due to the following considerations:

1. The interviews conducted indicated that although the paperwork load was at times heavy due to present work conditions (testing before fuel loading) and that to some degree this paperwork might detract from normal duties, it did not appear to be of the magnitude that the operators were "unavailable for running the plant for two hours."

2. The majority of paperwork causing the greatest concern to Unit Operators interviewed (e.g., performing and reviewing Surveillance Instructions) could not be performed by "other groups" due to the nature of the work performed and NRC licensing requirements.

The surveillance workload is a normal function of the position at all TVA nuclear plants and could be partially attributed to the varied workload requirements and preoperational testing performed in the unit control room before fuel loading. This would appear to be primarily a scheduling and shift management function. It was stated by Operations Management interviewed that the Shift Engineer had the authority to man the shift with operations personnel as necessary for the workload and to meet WBN Technical Specifications requirements (requirements beginning at fuel load).

These conclusions are verified correct and accurate by the current investigation. Subcategory report 30700 (307.05) contains related issues concerning surveillance activities.

Conclusion

The issue could not be verified.

Generic Applicability

These concerns were evaluated at the site of the concern (WBN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.01-9 - Corrective Action for Identified Problems is Inadequate

WBN Evaluation

Employee concerns IN-85-478-001 and IN-85-910-003 were evaluated at WBN.

This evaluation analyzes the methods, practices, and procedures used at WBN to identify corrective actions and root causes for operational problems. The methods utilized at WBN are Standard Practices WB11.7, Reportable Occurrences; WB11.8, Reporting Adverse Conditions To The Plant Superintendents; Administrative Instructions AI-7.3, Adverse Conditions and Corrective Actions; AI-2.8.3, Nonconformances 10CFR50 Appendix B; AI-2.8.4 Licensee Event Reports; AI-2.8.10 Reactor/Turbine Trip Report; and AI-2.8.11 Notification of Unusual Event. These control programs have been training topics for operations personnel along with the Maintenance Request procedure. The above procedures provide for corrective action on either a short term or long term basis along with a root cause analysis for problem areas that occur at WBN. Procedure WB11.8 gives the shift engineer the option of conducting an on-shift critique of an operational event such that the root cause can be determined. Every noteworthy operational event thus would be geared through one of the above procedures to undergo an independent event analysis and cause determination and recommend short term/long term corrective actions.

The present Adverse Condition and Corrective Action program is undergoing a major revision with respect to providing an improved problem identification and root cause trending mechanism for all Conditions Adverse to Quality (CAQs). The Tracking and Reporting of Open Items Systems (TROI) as a minimum, utilizes input from Problem Identification Reports (PIR), Deficiency Reports (DR), Corrective Action Report (CAR), and Significant Condition Report (SCR).

A review of the TROI system revealed that, 19 problems were identified with respect to operations in 1986. The root causes identified involved, two problems with unit startup, four problems with operating activities, three problems regarding compliance with operator instructions, and ten miscellaneous operational deficiencies. No trends could be identified with the available data.

The adequacy of the revised CAQ program was evaluated in fact sheet 307.08-WBN and the implementation of the program is tracked by CATD 30708-NPS-01.

The issue is not valid at WBN because there are programs for critiquing events, providing corrective actions, and determining root causes.

SQN Evaluation

Concern XX-85-067-001 was adequately addressed by the Nuclear Safety Review Staff report I-85-862-SQN. Because the concern was so generalized in nature, containing no specifics relating to the alleged problem, the NSRS committee utilized a wide range of reports to accurately document unit 1 performance during 1983, consisting of:

1. NRC Systematic Assessment on Licensee Performance (SALP reports) from July 1, 1981 to May 31, 1985.

2. NRC Regulatory violations as documented in I&E inspection reports.

3. License Event Reports (LERs)

4. Monthly operating reports submitted by Sequoyah Nuclear Plant to NRC and,

5. Interviews with individuals cognizant of unit 1 operations during the time period stated.

Section III of the NSRS report details the committee's findings relating to each category listed above. The investigation revealed:

1. No specific problems associated with the operation of unit 1 that were disregarded by plant management.

2. No individuals who had any knowledge of such problems.

3. Several instances of the unit being taken off line or dropped to a reduced power level for maintenance to be performed.

4. A reduction of LERs for 1983 relative to 1982.

5. SALP appraisals reflecting an overall improvement in plant operation. (See NSRS report references). The NSRS investigating committee could find no instances in the covered data to substantiate the concern.

Concern XX-85-067-001 was not substantiated by the NSRS investigation. An analysis of unit 1 operations data for 1983 failed to identify any specific problems which could have prompted the concern. The investigation concluded that no action was necessary regarding the concern.

This evaluation concurs with the NSRS findings; therefore, the issue was not substantiated for SQN.

Conclusion

At WBN and SQN, the issue was not validated.

Generic Applicability

Employee Concerns IN-85-478-001 and IN-85-910-003 were evaluated at WBN and found to be not valid. No other site evaluations were determined to be necessary.

Employee Concern XX-85-067-001 was evaluated at the site of the concern (SQN) and found to be not valid. No other site evaluations are determined necessary.

Issue 310.01-10 - Coordination Between Operations and PSO Emergency Team is Lacking

WBN Evaluation

The following previous investigation was conducted by Public Safety Service (PSS) personnel and established a lack of coordination between Operations and the PSO emergency team. However, adequate corrective action was taken before the evaluation.

The PSO emergency team member is the dedicated Emergency Medical Technician that responds to medical emergencies. Other members of the team include Health Physics (HP), Operations, and PSS personnel with an Assistant Shift Engineer (ASE) as the team leader. During a drill or actual emergency, these personnel respond to the location of the incident to perform various functions. The ASE acts as team leader and is responsible for the overall function of safe and efficient extrication of the injured. All drills have been evaluated and critiqued to identify possible weaknesses for correction.

In addition, real emergencies have been evaluated to determine appropriateness of treatment, actions at the scene, and coordination of these activities. There have been occasions where communications have not been as effective as desired, but in no case have the needs of the injured not been met. In the critiques it has been made clear that the ASE is the team leader and all communications should be made through that person.

In other situations where PSS would open gates for emergencies, a letter clarifying the procedures to follow was distributed to supplement procedures outlined in Section Instruction Letters. This procedure clarified that, for example, during a fire alarm response the initial responders would process through the normal access control portal. Additional personnel turned out in "dress out" gear would utilize the equipment gate located outside and west of this portal. If required, other gates in the plant would be opened as needed. Any other personnel would be processed through the control portal.

Presently, Implementing Procedure for Security/Access Control (IP-11) stipulates personnel control to Owner Controlled Area, Site Area, Protected Area, and the Control Room during implementation of the Radiological Emergency Plan (REP). This concern appears to have been written during the time when drills were first conducted. There does not appear to be the confusion now as there was in the past, as noted below.

Three Medical/Health Physics Radiological Emergency Drills have been conducted between 3-15-85 and 1-28-86. The coordination and communication by the ASE as the team leader has shown improvement. Subsequent to the initial confusion with respect to gate opening on previous drills, there was no identified confusion for vehicle or personnel access during any of these three drills, as noted by reviewing all observer critique sheets for these identified Medical/HP drills. NRC requirements allow for special security procedures to facilitate protection and safety of plant employees and equipment during declared emergencies; however, security measures and procedures cannot be relaxed or diminished during plant drills. Subcategory report 31200 also contains information related to this issue.

Conclusion

The issue is factually accurate but corrective action was taken before the evaluation.

Issue 310.01-11 - Violation of Procedures Caused Contaminated Water Spill

SQN Evaluation

Concern SQP-85-003-001 and SQP-85-003-002 were satisfactorily addressed in Nuclear Safety Review Staff report I-85-137-SQN. This NSRS report substantiated that a contaminated water spill did occur as described, but did not substantiate that any effort had been made to cover up the incident. Administration Instructions AI-30, AI-3 and Maintenance Instruction MI-10.46, the procedures applicable to the incident, were found to be sufficient and warranted no revisions.

The investigation did identify a questionable the practice utilized by shift operations personnel of allowing maintenance workers to manipulate valves without proper supervision or the issuance of an operating permit while performing certain test procedures. While this practice in no way caused the incident, plant management did issue oral instructions to all shift engineers to ensure the practice was discontinued.

Unit operator and health physics daily journals documented the incident in a manner sufficient to preclude any cover-up attempt.

The portion of concern SQP-85-003-001 describing a contaminated water spill caused by an electrician operating a valve was valid. This incident revealed circumstances where involved operations personnel failed to follow established practices, although this failure did not directly cause the incident. Plant management has issued verbal instructions to operations directing them to discontinue the practice. The incident was properly documented and no indication of a plant cover-up attempt was substantiated. No further actions are necessary regarding this incident.

Concern SQP-85-003-002 was not validated. The specific example stated in the concern was not found to be caused by a failure to follow specific procedures in the workplan. No evidence was found that management/supervision directed work to be performed in violation of procedures.

Conclusion

The issue was not validated.

Generic Applicability

The concerns were evaluated at the site of the concern (SQN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.01-12 - Operations Should Have Itemized Bulb and Fuse List

SQN Evaluation

All interviewed Assistant Shift Engineers indicated that an itemized list of fuse and light bulb sizes would be helpful, but was not absolutely necessary for continued unit operations. Thus, the concern was factually accurate, but did not require corrective action. However, the plant operations superintendent affirmed that work plans are currently being written to add updated fuse descriptions to each fuse location throughout the plant, as well as to have fuse descriptions added to the Operating Instruction Power Availability Checklists. These requirements should alleviate the need for a separate itemized checklist. A computerized list of fuses for plant equipment is presently available in the Main Control Room. Interviews with Assistant Shift Engineers have indicated that enough information is presently available to allow for correct fuse identification, although several different references frequently need to be utilized to make this determination. When work plans 120-20, 120-52, 120-57, 120-58, 120-65 and 121-52 involving fuse identification and replacement are completed and precise fuse descriptions are included in operation instructions, fuse identification should then prove to be a relatively simple procedure for operations personnel.

This investigation revealed that a fuse/bulb list was more of a convenience item rather than a necessity. Plant management indicated that sufficient modifications and procedure revisions were currently in progress to ensure the correction of any fuse problems presently identified at Sequoyah. No additional actions are necessary regarding this concern. Based on the findings of this report this concern is not valid.

Conclusion

The issue is factually accurate but corrective action was not a requirement.

Issue 310.01-13 - Reactor Coolant Leak Caused by Management Desire to Break Time Records

SQN Evaluations

Further information revealed this leak to be in the steam generator. The NSRS Report (I-85-372-SQN) was reviewed for its adequacy and completeness in answering this concern. The findings from that report are as follows:

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

The records reviewed in this investigation revealed that in early May 1983, the unit 2 No. 3 steam generator experienced a through-wall tube leak. This resulted in leakage of reactor coolant into the secondary side of the steam generator. The unit continued to operate until the reactor tripped as the result of the loss of a feed pump on July 18, 1983. The leakage at that time was approximately 311 gallons per day.

The plant operational event report issued the day following detection of the tube leak stated "current plans are to continue normal operation until scheduled refueling outage." Since the technical specification primary to secondary tube leakage limit of 500 gallons per day was never exceeded, continued operation did not present a safety concern. Economic considerations dictated that the unit continue to operate until the scheduled August 5, 1983 refueling outage if possible.

The leakage rate was monitored frequently during this time and did not exceed the NRC-approved technical specification limit. The leakage was calculated to be 553 gallons per day on July 19, 1983, after the unit had tripped; however, this was later determined to be an erroneous calculation because the unit was in a transient condition. For calculations of this nature to provide accurate results, the data must be taken when the unit is operating in a stable condition for several days, which was not the case after the trip. However, Potential Reportable Occurrence (PRO) Report No. 2-83-71 was initiated.

During discussions between plant management, Westinghouse, and NRC (documented on TVA 45D dated 7/28/83 memorandum from L N to WMH), they agreed that the leakage calculation was not valid and that the more accurate determination of leakage was the one made just before the trip. Therefore, technical specification limits had not been exceeded and it was determined that the event did not require a formal report to the NRC.

Concern XX-85-007-002 is determined by the NSRS Report (I-85-372-SQN) to be not valid and is concurred with by this evaluation for the following reasons: (from NSRS report)

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

The leak was not caused by management actions or lack of management actions, but by movement of a loose metal piece rubbing against the tubes.

The leakage never exceeded 500 gallons per day.

This evaluation concurs with all of the above listed conclusions of the NSRS and GCTF reports.

Conclusion

The concern could not be validated.

Generic Applicability

This concern was evaluated at the site of the concern (SQN) and found to be not valid. No other site evaluations were determined to be necessary.

3.2 Element 310.02 - Operator Qualifications

Issue 310.02-1 - Reactor Operator Selections Should Not Be Subject to Racial Quotas

WBN Evaluation

Concern EX-85-081-002 was previously evaluated by the Nuclear Training Branch. The Nuclear Training Branch evaluation is considered to be adequate to resolve the specific concern, and the concern is not valid. A review of this evaluation revealed that operator selection is conducted in accordance with TVA's Equal Employment Opportunity/Affirmative Action (EEO/AA) program.

Each selected candidate must perform to established standards as identified by NRC and TVA. Each candidate is trained and tested equally by various personnel before being awarded permanent employment. TVA's EEO/AA program is discussed in greater detail in Management and Personnel Subcategory Report 70500.

Conclusion

This concern could not be verified as factual.

Issue 310.02-2 - Operator Qualifications and Training Inadequate

WBN Evaluation

All seven concerns were evaluated at WBN and the WBN evaluation is the basis of the SQN evaluation.

Regulatory requirements for operator training are specified in 10CFR55 "Operators Licenses" and ANSI/ANS 3.1 "Selection, Qualification and Training of Personnel for Nuclear Power Plants." Regulatory Guide 1.8 "Personnel Selection and Training" describes an NRC-acceptable method of implementing the regulatory requirements.

Area plan 0200, specifically Program Manual Procedure (PMP) 0202.05 "Nuclear Plant Operator Training Program", documents the method TVA uses to train and qualify nuclear plant operations personnel.

Comparison of the requirements in PMP 0202.05 with the regulatory requirements revealed that PMP 0202.05 meets or exceeds the requirements of 10CFR55 and ANSI/ANS 3.1. Additional regulatory requirements contained in NUREG-0737 "Post-TMI Action Plan" were also found to be incorporated into PMP 0202.05.

Operator training at WBN is implemented via Operations Section Letters OSLT-1 and OSLA-27. Review of these procedures revealed that they meet or exceed the requirements of PMP-0202.05.

Nuclear Plant Operator Training is a comprehensive 113-week training program designed to give the student operator fundamental background in all facets of nuclear power plant operation. Upon completion of the course, a walk-through certification on plant systems, administered by knowledgeable qualified plant personnel, will allow the AUO to assist in the operation of equipment within well-defined areas throughout the plant. All TVA operating positions have minimum acceptable performance standards for promotion as set by the Nuclear Plant Training Program 0202.05. Promotions are based upon the contingency that the individual pass an exam administered by the Nuclear Regulatory Commission (NRC) in accordance with 10CFR50, part 55.

It was determined during the evaluation that portions of the operator training program are taught at the POTC and portions are taught at WBN. It was noted that these portions taught at the POTC have been granted Institute for Nuclear Power Operations (INPO) accreditation under the SQN operator training program. The plant-specific training conducted at WBN has not yet received INPO accreditation because of the time remaining before fuel load.

A review of the implementation of the program was conducted by randomly selecting names and reviewing training records. This review consisted of approximately 15 individuals with no discrepancies identified. This review was conducted at POTC and at WBN. Licensed operator training is further addressed in Element 310.01-WBN.

In addition to this training, the AUO, UO, ASE and SE must undergo retraining each year in the areas of plant procedures, changes to facility, QA requirements, as well as industry operating experience and operator errors, as applicable to their areas of responsibility.

Unit Operators (UO) meet the qualifications listed above plus have an additional 17 weeks of intensive training before becoming a unit operator. This training allows personnel to operate equipment that is controlled from the control room.

NSRS Report I-85-222-WBN documents the NSRS evaluation of a concern that inadvertent valve operation during hot functional testing would have caused a radioactive spill had the plant been in operation.

NSRS did not identify a specific case of water spill. However, the report evaluates the valve configuration control program and associated operator training history since unit 1 had functional testing.

The history revealed deficiencies identified by NRC, NSRS and QAB with regard to system configuration control and independent verification.

NSRS conducted a review of the history of OSLA-2 on system configuration control and AI-2.19 on independent verification. It was noted that four revisions to OSLA-2 had been made subsequent to unit 1 hot functional testing and three revisions had been made to AI-2.19. These revisions were for the purpose of clarification to improve implementation and, in the case of AI-2.19, to expand coverage. NSRS verified that the operations personnel had received training on the revised procedures.

Based on the above information, NSRS did not substantiate the concern, since corrective action had been taken. However, this evaluation noted that the effectiveness of these corrective actions could not be verified, as configuration control has not been maintained subsequent to the revisions.

SQN Evaluation

Operator qualifications and training requirements mandated by the NRC are as described for the WBN evaluation above and are applicable for all TVA operator training. The SQN operator training program has received INPO accreditation certifying the program's content and requirements. Thus, the issue of inadequate operator training and knowledge of operations is not valid at SQN.

Conclusion

At WBN and SQN, the issue was not validated.

Generic Applicability

The concerns were evaluated at the appropriate sites (WBN and SQN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.02-3 - Female Operators Unable to Perform Adequately

WBN Evaluation

This issue received a response from the WBN Site Director. In that response, it is stated that male and female operators receive identical training and testing.

A review was conducted for this evaluation of the AUO site specific training. The AUO "break-in" and testing requirements are documented in OSLA-27 and OSLA-46. The requirements and testing criteria are adequate to ensure consistency of training and qualifications. The issue that female operators are unable to perform adequately was not substantiated at WBN.

SQN Evaluation

Sequoyah's training programs for operators at all stages meet or exceed all applicable guidelines. As such, INPO has accredited Sequoyah's training program as of January 1984. INPO continues to review accredited programs on a regular basis to ensure the training meets their standards.

Sequoyah employs, and will continue to employ, as part of its commitment to Equal Employment Opportunity Act, women in its Operation Section.

Three individuals were contacted from Sequoyah Operations Staff. Individuals A and B are licensed reactor operators (RO) and individual C is a licensed Senior Reactor Operator (SRO) and an ASE. When interviewed, each of these individuals stated that they had experienced no greater incidence of occurrence with women operators being physically incapable of performing in-plant duties than with males in the same positions.

Each individual stated that as licensed operators (RO and SRO) they were fully aware of the problems areas in the plant and the capabilities of the Assistant Unit Operators (AUO) on their staff. If necessary, the AUO (male or female) may at any time request assistance in performing a manipulation. Individual C further stated that in the case of a plant emergency it is common practice to dispatch more than one AUO to a job for personnel safety reasons.

This issue is not factual as interviews with operators (UO and ASE) accumulated no evidence of physical incapability of women to adequately perform AUO duties, and they are trained to the same requirements.

Conclusion

At WBN and SQN, the issue could not be verified.

Generic Applicability

The concerns were evaluated at SQN and WBN and determined to be not valid at both sites. No other site evaluations were determined to be necessary.

Issue 310.02-4 - Operator Quality Assurance (QA) Training Inadequate

WBN Evaluation

A review of QA CARs and DRs issued against the operations department was conducted by review of the PQA Monthly Reports. A significant increase in rejection rate of SIs was noted for a three month period beginning in April, 1984. It was noted that at this time QA began reviewing procedures in preparation for plant licensing. The operators previously had not considered the procedures to be QA records.

The majority of the deficiencies involved improper filling out of the procedures, (i.e., blanks, illegibility, cross outs, etc.). Corrective action at that time was to place the Shift Technical Advisor (STA) in the review cycle. Upon implementation of this the SI rejection rate was reduced. Additional corrective action was implemented via the "Attention to Detail" training where operators were cautioned to pay more attention to detail. This training was documented by group training, week two, 1986.

This issue was determined to be valid at the time the concern was expressed. However, corrective action was implemented and is ongoing to correct deficiencies in the maintenance of proper QA documentation. No further corrective action is required.

SQN Evaluation

The General Employee Training Course, GET-4, "Introduction to Quality Assurance/Quality Control" is required training for all operators, and retraining is required every two years. Informal QA training by way of required reading is also required for all operators. This required reading falls in three areas:

1. Initial required reading of applicable Plant Operations Review Committee (PORC) approved instructions.

2. Required reading of change summaries to specific PORC approved instructions.

3. Reading assignments on an "as determined" basis by the training section.

Certain instructions required to be read are QA requirements and other procedures which implement various QA requirements. The required reading programs are addressed in Operations Section Letters, OSLT-1, and OSLA-1.

The SQN operators are required to attend six weeks of requalification training annually. Quality Assurance requirements are a part of the requalification training. The 1985 requalification class titled "Maintaining Awareness of Plant and System Operational Status" included retraining on first and second person verification and retraining on procedures and procedure usage.

As stated in the summary of the "Maintaining Awareness of Plant and System Operational Status" class, there is no place at SQN for an operator who is not dedicated to the correct usage of plant procedures.

The findings above reported in the Generic Concern Task Force reports and the NSRS report have been reviewed and verified to be accurate with the following additions:

1. Operator clearance training consists of formal, documented, classroom training for SE, ASE, and UO positions, while the AUO receives on-the-job training by assisting the ASE in the execution of a clearance order.

2. Operators are required by OSLT-4 to meet specific QA training requirements of which AI-4, Plant Instruction - Document Control is included.

AI-4 stipulates under the use of instructions that each employee shall be responsible for conformance with the requirements of plant instructions. Employees guilty of willful or repeated violations shall be disciplined in accordance with Appendix J. The policy in Appendix J states the disciplinary action should be selected and administered to correct the cause of the nonconformance. There are progressive steps of disciplinary action which lead to a proposal of termination.

This issue is not factually accurate. The opinion that operators are not being adequately trained on QA requirements is perceptual and an individual opinion. Training on the QA requirements is conducted both formally in the classroom and informally by way of required reading, which is documented per OSLT-1.

Conclusion

At WBN, the issue was factually accurate but corrective action was initiated before the evaluation.

At SQN, the issue was not valid.

Generic Applicability

The WBN evaluation of this concern identified a deficiency specific to WBN. The SQN evaluation determined that the concern was not valid. No other site evaluations were determined to be necessary.

Issue 310.02-5 - Operator Training Programs Hurt by Rotating Trainers

WBN Evaluation

After interviews with the Assistant Operations Supervisor and the instructors, it was determined that they are assigned to training for a one-year period.

An interview with Operations Training personnel indicated that INPO and the NRC had supported the fact that instructors were rotated from plant positions to training positions. This practice was perceived as a good practice. It was recognized during the interview that only one of the three instructors in plant training was instructor qualified. However, the other two were working towards certification. AI-10.1 allows 18 months before instructor training certification completion is required.

The issue was determined to be not valid because the rotation of trainers improves, rather than hurts, training programs. The assignment of training is not arbitrary and no evidence was found to indicate ineffectiveness.

Conclusion

The issue was not validated.

Generic Applicability

This concern was evaluated at the site of the concern (WBN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.02-6 - Plant Operator Training May be Inadequate

WBN and SQN Evaluations

The requirements for the Shift Technical Advisor Program are contained in NUREG 0737 and 0660. They are implemented by TVA in Program Manual Procedure 0202.07.

The training program is conducted by the POTC as is the operator training. However, the scope of the STA program is not intended to provide STAs with knowledge sufficient to equal the operators'. The purpose is to provide engineers with the knowledge necessary to advise the Licensed Shift Engineer in technical matters. This scope is consistent with the requirements of NUREG 0737 and NUREG 0660.

The training program for Shift Technical Advisors at POTC has received INPO accreditation indicating an acceptable program.

This issue was not substantiated because neither the STA nor the operator training programs were found to be deficient.

Conclusion

The issue was not validated at SQN or WBN.

Generic Applicability

This concern was evaluated at WBN and SQN and found to be not valid at both sites. No other site evaluations were determined to be necessary.

Issue 310.02-7 - Shift Engineer Training in Electrical Station Operation is Inadequate

WBN Evaluation

Concern WI-85-060-001, the original concern, was not specifically previously evaluated. However, two NSRS reports were found which addressed the identically worded concerns generated for Sequoyah Nuclear Plant (SQN) and Bellefonte Nuclear Plant (BLN). The results of the evaluations were documented in reports I-85-619-SQN and I-85-620-BLN, respectively. A review of these reports revealed an adequate evaluation with regard to upper tier documents and requirements. The report identified a four step electrical training program requiring a total of 25 weeks to complete. All Assistant Shift Engineers (ASEs) and Shift Engineers (SEs) must have completed these courses prior to assuming the positions. As this training program is generic to all sites and administered under the cognizance of the Power Operations Training Center (POTC), the results of the NSRS evaluations are applicable to WBN. However, implementation at WBN will be reviewed independently.

A review of the operator training records at WBN identified 28 functional ASE/SE individuals. Eleven of these were transferred from the Fossil Training Program. A review of the Training Plan for Operators of Fossil, Hydro, and Substations identified 450 hours of electrical training to complete the program.

Six operators' records were randomly selected, with each of the six containing documentation of either course completion or specific class completion. A review of the ASE Electrical Upgrade Training documentation requirements in effect at the time all six individuals received training revealed that the documentation maintained was in accordance with the requirements in existence at that time.

The issue was determined to be not valid at WBN because the electrical and switchyard training required of the operations personnel is comprehensive and no cases were identified that indicated that the training is not conducted.

SQN Evaluation

NSRS investigated the SQN specific concern (XX-85-093-001). All SE/ASEs receive training in electrical station operation that meets the NRC requirements and the SQN training program has received INPO accreditation. The ASE undergoes an additional six weeks of electrical training in conjunction with the operator training program. Step 3 is a 6-week ASE upgrade electrical training program required before taking the accrediting examination for ASE. All ASEs and SEs must have successfully completed this training or its equivalent.

This training addresses both offsite and onsite electrical systems. The ASE Electrical Upgrade Training covers all aspects of switchyard design and operation. This training allows the ASE to be placed on the dispatcher's clearance list. The dispatcher's clearance list allow the ASE to receive switching instruction from the dispatcher. The dispatcher is responsible for the switchyard equipment manipulation. This is accomplished remotely by giving instructions to the ASE. The instructions are written down and repeated back to the dispatcher verbatim. If he agrees with the dispatcher, he will perform the operation according to procedure.

The shift engineers and assistant shift engineers receive training in electrical station operation that meets the NRC requirements and the Sequoyah training program has received INPO accreditation. No examples of poor switchyard operation or operation of this equipment in a manner that endangered the nuclear equipment at Sequoyah was found. Therefore, the issue is not valid for SQN.

BFN Evaluation

NSRS investigated the BFN specific concern (XX-85-093-003). All SEs/ASEs receive training in electrical station operation that meets the NRC requirements. The BFN operator training program has committed to implementing the INPO SRO operator training program guidelines which are utilized as criteria for INPO accreditation. The BFN SRO operator training program is now undergoing INPO accreditation.

The ASE receives an additional six weeks of electrical training in conjunction with the operator training program. ASE upgrade electrical training program is required before taking the accrediting examination for ASE. All ASEs and SEs must have successfully completed this training or its equivalent. This training addresses both offsite and onsite electrical systems, and all aspects of switchyard design and operation. This training allows the ASE to be placed on the dispatcher's clearance list.

The dispatcher's clearance list allows the ASE to receive switching instruction from the dispatcher. The dispatcher is responsible for the switchyard equipment manipulation. The instructions are written down and repeated back to the dispatcher verbatim.

If he agrees with the dispatcher, he will perform the operation according to procedure.

The investigation and verification of the NSRS report did not identify any specific examples of problems with switchyard operation as a result of inadequately trained ASEs or SEs.

This was based on discussions with cognizant PSO personnel. However, a potential problem exists with ASE availability when PSO needs a switching operation. This delay can adversely affect operation of the TVA power system and was addressed by BFN management. If the dispatcher determines his switching to be an emergency, the unit 2 ASE is to respond immediately. If this unit 2 ASE is not available due to unit 2 plant conditions, then the BOP SE is to assign any available ASE to perform the emergency switching.

The shift engineers and assistant shift engineers receive training in electrical station operation that meets the NRC requirements. No examples of poor switchyard operation or operation of this equipment in a manner that endangered the nuclear equipment at BFN was found. Therefore, the issue is not valid for BFN.

BLN Evaluation

Concern XX-85-093-002 was evaluated at BLN for this issue.

A comprehensive operator training program has been developed and implemented to ensure that Bellefonte reactor operators and senior reactor operators meet the qualifications and training requirements established or endorsed by the NRC. This training program is described in Nuclear Power Program Procedure 0202.05, revised March 15, 1985, entitled "Nuclear Plant Operator Training Program."

Training of Bellefonte operators in electrical operation of plant and switchyard systems is conducted from the initial auxiliary unit operator training through the assistant shift engineer training. This training is comprehensive and covers details of electrical theory and the actual operation of switchyard equipment. The operators are required to pass tests to demonstrate their knowledge.

The operation of electrical switchgear is a normal and routine part of the unit operator job. The electrical training program for nuclear operators is presented in four steps in Nuclear Power Program Procedure 0202.05.

At this time no training is being conducted for shift engineers, assistant shift engineers, or plant operators for Bellefonte. The delay in construction and operation of the plant has left only a skeleton crew of operations personnel at the plant. This crew has received the training listed above for TVA nuclear plant shift engineers and assistant shift engineers.

Normal operation of the switchyard is accomplished remotely from the Area Dispatching Control Center (ADCC) at the Chickamauga Dam by the dispatcher. The switchyard can also be operated by the assistant shift engineer on duty at Bellefonte. When the switchyard is operated locally, the PSO dispatcher at the ADCC calls the ASE at Bellefonte and gives instructions for any new configuration of the switchyard. The instructions are written down by the ASE and repeated verbatim to the dispatcher so that there will be no question as to what is to be done. Although there was no evidence of any poor operation of the switchyard at Bellefonte, some PSO individuals that were interviewed felt that the nuclear plant operators did not react quickly enough to their requests for switchyard changes. They felt that this could endanger the reliability of the power grid.

The Bellefonte Shift engineers and assistant shift engineers were given extensive training in the operation of the switchyard (both classroom and on the job.). The training meets NRC requirements. No examples of poor switchyard operation or operation of this equipment in a manner that endangered the nuclear equipment at Bellefonte were found. Therefore, the issue is not valid for BLN.

Conclusion

The issue was not valid at all sites.

Issue 310.02-8 - Fire Brigade Training Inadequate

SQN Evaluation

The Fire Brigade at SQN has existed since 1979 with responsibility for fire protection activities for the operating nuclear plant. The training provided and required (Procedure number 0202.05 and OSLT-1) for the Fire Brigade is in most aspects more extensive and comprehensive than the State Fire Training School. Operations Section personnel comprise the entire Fire Brigade at SQN. Therefore, they are familiar with the plant, its hazards, and the location and function of the various plant operating and fire protection systems.

The issue is not valid due to the fact that SQN's major firefighting responsibilities have not belonged to the Public Safety Officers (PSO) since 1979 when they were turned over to the Fire Brigade. The Fire Brigade receives extensive comprehensive training and firefighting practice to ensure there is no lack of experience.

Conclusion

The issue was not valid at SQN.

Generic Applicability

The concern was evaluated at the site of the concern (SQN) and found to be not valid. No other site evaluations were determined to be necessary.

3.3 Element 310.03 - Operations Procedures Need Clarification, Rewritten and Used

Issue 310.03-1 - Chemical Unloading Procedures Inadequate

WBN Evaluation

Operations procedures problems in general were analyzed by reviewing the procedure generation, revision, and validation processes. All SOIs and SIs are now being revised to meet all writer's guide requirements. Most of these procedures were initially written before the current Operating Instruction Writers Guide was available including procedures referenced in this element's concern. Prior to the onset of the writers guide the procedures were written based upon operating experience, testing, and plant knowledge obtainable from vendors or manufacturers. Procedure writers have always been unit licensed individuals with plant operations knowledge.

In addition to the required two year review, there are several mechanisms to ensure procedures are kept technically accurate. The Operations procedures group currently reviews Instruction Changes (IC) generated by Operations because of procedure implementation problems for possible procedure revision. The Operations supervisor reviews and signs workplans for possible effect upon systems and ultimately procedures. Any other NUC PR procedure revisions that may affect operations procedures are analyzed by Operations procedure group through informal PORC review. All plant related technical procedure changes are immediately incorporated, while other nontechnical issues may await the required two year review.

Interviews with Operations personnel reveal no major problems with current procedures. All procedures for operating receive a walk-through verification and, when conditions allow, receive an operational verification prior to being issued.

The chemical transfer/unloading near-miss accident with acid and caustic solutions was investigated within one week of the event by the WBN Industrial Safety Section with recommendations made and implemented. The incident is reported as follows:

On May 8, 1985 the plant received a shipment of 50 percent caustic soda from a chemical vendor. Chemical laboratory analysts had been incorrectly informed by Power Stores personnel that the shipment was 95 percent sulfuric acid. A specific gravity test made at the site failed to uncover the error and the caustic truck was subsequently connected to the plant 12,000 gallon acid tank. The vendor observed the incorrect connection and alerted the operator in charge before transfer operations were attempted. The transfer connections were then correctly aligned and the transfer proceeded without incident.

The Industrial Safety Engineering Staff then conducted an investigation/evaluation of this concern, which referenced the caustic chemical incident along with a diesel fuel spill caused by an overfilled diesel fuel tank. The investigation revealed additional data on the caustic situation in that a positive lockout did not exist because both the acid and caustic tanks are equipped with 2-inch couplings. With regard to the diesel spill mentioned in the concern, there have been two while filling the internal tank for Number 5 auxiliary diesel generator. These spills were caused by an improperly installed tank fill indicator. (Discussed in detail in Subcategory 31300).

The initial investigations on the acid/caustic incident provided recommendations to (a) revise the acid/caustic transfer procedure to provide additional assurance of proper alignment, (b) revise chemical procedure for sample identification, (c) investigate the possibility of a similar incident to all TVA plants with similar facilities. These recommendations have been addressed. Therefore, this issue was valid but corrective action was initiated before this evaluation.

Conclusion

The concern was valid at WBN but corrective action was taken before the evaluation.

Issue 310.03-2 - Control of Plant System Status is Inadequate

WBN Evaluation

The issue of plant system status is also addressed in Subcategory Report 30700. NSRS investigated the concern regarding control of plant system status at WBN. The investigation revealed that a clearance procedure written to isolate valves in the radwaste system was the cause for concern. The NSRS reviewed the specific clearance sheet for this work, other applicable clearance sheets, and the mechanical flow-diagram drawings. Their review then centered on the conformance with the clearance procedure for valve configuration control. The clearance for this work did not establish a complete boundary of isolation. The responsible craft supervisor that issued the clearance did not make a visual verification of clearance boundaries and was not aware of other clearances associated with the work.

This investigation also identified an additional scope item related to the inadequate control of plant system status. Interviews with operation personnel revealed that control of plant system status has only been maintained during the previous two hot functional testing periods. Therefore, today the only configuration control required to be maintained is on the fire protection system because of its present plant use.

During the time of March/April 1985, WBN was preparing for fuel load after the second hot functional test. Thus, they were maintaining configuration control at that time. Between July 12 and September 21, 1984 the NRC inspected WBN activities with regard to system configuration control. Administration Instruction 2.1 "Authorities and Responsibilities for Safe Operation and Shutdown" states that system alignment status shall be maintained on CSSC systems as specified in Operations Section Letter (OSL-A2) which stipulates which systems require status maintained.

The NRC identified two procedural deficiencies against OSL-A2 and three status file deficiencies which led to a severity level IV violation. WBN responded to the NRC violations by correcting the OSL-A2 deficiencies and committing to providing further procedural enhancements after they conduct an industry survey on other utilities, configuration programs.

Subsequent to the NRC inspection the plant QA (PQA) staff has conducted several system alignment walkdown surveys with problems identified on every survey report. These surveys were conducted from February until June 1985, with the last one still requiring a follow-up survey by PQA. This is still the situation as of this date; i.e, PQA considers the operations configuration control program to be deficient; however, the program is not auditable at this time and will be reevaluated once operations configuration control is reestablished before fuel load. Corrective Action Report WB-CAR-85-20 initiated in April 1985 noted numerous equipment misalignments and status deviations and was thought to be still open.

The CAP for CATD Number 31003-WBN-02 disagrees with the status of WB-CAR-85-20 and the line management response, which indicates appropriate corrective action has been taken, was accepted. See Section 6.1.3 CATD Number 31003-WBN-02 for details.

The concern about control of plant system status was validated by NSRS. They provided three recommendations: a) discuss clearance deficiencies with Operations and craft supervisors stressing the importance toward assuring personnel safety, b) increase PQA surveillance in this area, and c) initiate an MR to inspect and repair the mixed demineralizer 1A resin discharge valve.

This evaluation concurs with the NSRS findings and recommendations.

The recommendation addressing clearance program retraining of craft/construction personnel is being implemented: personnel authorized clearance responsibility will attend training classes on AI 2.12.

Conclusion

This issue is valid and corrective action is being taken.

Generic Applicability

The concern was evaluated at the site of the concern (WBN) and found to be valid. It was determined that the concern was related to the implementation of system status control during hot functional testing. This isolates the issue to WBN due to implementing the control of plant system status requirement for purposes of dry running in the preoperational phase and no other site evaluations are determined necessary.

Issue 310.03-3 - Procedure Adherence and Valve Control Inadequate

WBN Evaluation

A previous NSRS evaluation determined that the spill was due to improper control of root valves for steam generator upper and lower taps to which temporary tygon tubing was attached, as documented by a Temporary Alteration Change Form (TACF). The tubing was installed for steam generator level indication while normal level indication was not available due to plant conditions. The root valves were constantly open, instead of being opened only during the time a level reading was being taken. This set the conditions which allowed the tygon tubing to blow off the fitting when a leaky valve pressurized the steam generators.

This occurrence was the second of this type within four days. The results of the evaluation were that the concern is valid, but adequate corrective action was initiated and completed before the evaluation.

A review of the TACF review process revealed that all CSSC TACF require PORC approval and non CSSC TACF require Section Supervisor and SE/SRO approval before installation. A review of deficient TACFs indicated that the problems could be corrected by reviewers and installers paying more attention to detail. Thus, independent verification is not necessitated in the TACF process. |R2

There were two recommendations identified in NSRS Report I-85-415-WBN:

1. Delayed Recurrence Control Execution, which states that management should emphasize to the plant staff that a recurrence control program is in place (CAR/DR system) that should be promptly used without hesitation to analyze events to determine root cause and generic applicability and to assure that decisive corrective action is taken to prevent recurrence.

2. Inadequate Procedural Controls, which states requirements should be clearly established and delineated in writing which provide criteria for the selection, installation, and use of tygon tubing in abnormal configurations for water level measurement. Specifically, a caution order should be issued to control the root valves to which the tubing is attached.

This evaluation concurs with the NSRS findings and recommendations.

WBN has responded to each of the two NSRS recommendations by addressing these control programs in operation training with emphasis on implementing these programs, and providing control of tygon tubing in a General Operating Instruction (GOI). These responses have been verified as complete.

SQN Evaluation

The hydrazine spill incident at WBN generated two NSRS recommendations from Report I-85-415-WBN which were analyzed at SQN.

With respect to problem recurrence control, there currently are programs and procedures at SQN which allow for assessment of corrective action, root cause, and generic applicability after a problem has been identified. These procedures are AI-12, Adverse Conditions and Corrective Actions; AI-18, Plant Reporting Requirements; SQN-84, Reportable Occurrences; and SQN-94, 10CFR21 Evaluation and Reporting Requirements. The plant reporting requirements instruction has recently been presented to all licensed operators in requalification training.

With respect to tygon tubing procedures, SQN has procedures stipulating the use of tygon tubing for Reactor Coolant System (RCS) level monitoring during RCS filling and draining in Mode 6 operation. However, there are no procedures or instructions to control the root valves associated with the tygon tubing configuration allowed by these procedures. There are also no SQN administrative controls that address any other abnormal tygon tubing configuration.

BFN Evaluation

The hydrazine spill incident at WBN generated two NSRS recommendations from Report I-85-415-WBN which were analyzed at BFN.

With respect to problem recurrence control, BFN has a similar recurrence control program as was identified by NSRS report I-85-415-WBN. The program implements usage of a Deficiency Report (DR) and Corrective Action Report (CAR) for problem identification, corrective action, and root cause analysis. However, there appears to be no emphasis placed on the programs as of this time since there have been no recent incidents to warrant the emphasis, and evidence exists by the number of written DRs and CARs that the system is utilized as intended.

With respect to tygon tubing procedures, BFN has one procedure identifying the use of tygon tubing for vessel level indication during an abnormal plant configuration. This tygon tubing is used for support instrumentation during a vessel drain down for jet pump work, and recirculation riser piping crack repair work. The vessel level will normally require continuous monitoring during the utilization of procedure IMSI-3020. Due to the continuous monitoring requirement there is no need for cautions, notes, or instructions on the control of these tygon tubing root valves in this procedure.

After reviewing the Temporary Alteration Change Form, clearance procedure, and all BFN Operations Section Instruction Letters, there appears to be no other administrative procedures that address the control of tygon tubing or root valves to tygon tubing.

BLN Evaluation

The hydrazine spill incident at WBN generated two NSRS recommendations from Report I-85-415-WBN which were analyzed at BLN.

With respect to problem recurrence control, BLN has a similar recurrence control program as was identified by NSRS report I-85-415-WBN. The program implements usage of a Deficiency Report (DR) and Corrective Action Report (CAR) for problem identification, corrective action, and root cause analysis. However, there appears to be no emphasis placed on the programs as of this time due to the fact there has been no recent incident to warrant the emphasis.

All plant personnel are cognizant of these procedures since all sections of the plant operating staff are required to know how to initiate corrective action by implementation of the DR or CAR.

With respect to tygon tubing procedures, BLN currently has no procedures identifying the use of tygon tubing for temporary level indication during an altered system configuration. BLN has in the past and currently uses tygon tubing for tank level indication until the time when permanent level indication is installed, tested, and transferred to ONP for operation. All of the above referenced situations have not required constant level indication, only one level reading is required per shift. The Operations Sections does not have procedures controlling the usage of tygon tubing for level indication.

Conclusion

The concern was valid at WBN. However, corrective action was initiated and completed before this evaluation.

The issue is valid for SQN and CATD Number 31003-SQN-01 was issued for this problem. The corrective action plan proposes (1) changes to instructions, (2) caution orders and (3) memos to correct the problem.

This issue is valid for BFN and CATD Number OP 31003-BFN-01 was issued. The CAP has proposed a revision to Standard Practice BF 14.25 to correct the problem.

BLN's acceptable line management response (on CAP in CATD Number OP 31003-BLN-01) is that procedure BLO-1.1 assures adequate controls. Based on this response the concern is not valid at BLN.

3.4 Element 310.04 - Procedure Violations

Issue 310.04-1 - Oil Spill Cleanup Not Per Procedure

WBN Evaluation

The diesel oil spill referenced in concern IN-86-287-002 was investigated by the WBN Industrial Safety Staff. Their findings reveal that the oil released from the diesel generator (DG) building to the retention pond was controlled, and cleaned up by the use of a floating boom and oil-absorbent pillows. In addition to the cleanup at the pond, soil and gravel contaminated with oil in the vicinity of the DG Building was removed from the area and ultimately disposed of at a sanitary landfill after receiving disposal approval from the State. Oil-absorbent pillows were placed around the yard drainage system catch basins along the path of the spill to protect against oily runoff. Oil-absorbent

material was used on exposed concrete and asphalt surfaces. All recovered oil was collected in drums and transferred to the waste oil tanker. Pond discharge water samples were collected and revealed no permit effluent limitations being exceeded. Similarly, routine monitoring since the spill has detected no elevated oil levels, which indicates that the cleanup efforts were successful, as reported by the Industrial Safety Engineering Staff. Therefore, this issue is not valid. Further information on oil spills is provided in Subcategory Report 31300.

Conclusion

The issue is not valid.

Issue 310.04-2 - Test Clearance Given by Unqualified Person

WBN Evaluation

Interviews with supervisors involved, the WBN operations supervisor, Safety personnel, and a Mechanical Maintenance Engineer indicated that they had no knowledge of this incident. The hydrogen system engineer from Mechanical Maintenance stated that hydro tests are not performed on pnuematic systems and recalls no instances where personnel safety was endangered during any hydrogen system test. This investigation also revealed that the SE involved with the hydrogen system at the time of the alleged occurrence was transferred from Watts Bar Steam Plant as a nonlicensed SE to perform nonlicensed duties. This could account for the statement "unqualified SE."

Conclusion

The investigation determined that the concern was not factual.

Issue 310.04-3 - Procedures for Condensate Demineralizer Violated

WBN Evaluation

SOI 14.1 "Condensate Demineralizer Polisher Operation," requires that an operational log be maintained during polisher operation and regeneration. After each polisher is removed from service, the corresponding log sheet should be forwarded to the Chemical

Engineering Section. An inspection of the log data sheets hanging on the condensate demineralizer control board in the Turbine Building revealed that these data sheets are not completed correctly. There are still data log sheets on the control board since the last polisher operation in 1984. These logsheets have not been forwarded to the chemical results section, which is a procedural violation.

Data log sheets are used by chemical engineers to assess resin performance. They do not contain information related to the operation of the plant that is not also included on Secondary Chemistry logsheets. The Secondary Chemistry data is recorded daily during functional testing or normal operations and submitted to the SE for his/her review.

Conclusion

The evaluation found this issue to be factually accurate, but what is described is not a problem.

Issue 310.04-4 - Steam Generator Chemistry Control Inadequate

WBN Evaluation

Interviews with cognizant Operations Section personnel and Radiochem-lab personnel revealed that there have been no instances when the steam generators have not had the proper required chemistry control. Operations Section contacts the radiochem-lab once the system is placed in a condition requiring chemistry control. The Chemical Unit maintains daily chemistry logs which are routed to Operations for review. No specific instance could be found where this procedure was not implemented during the time chemical control was required during functional testing.

Conclusion

The issue could not be validated.

Generic Applicability

The concern was evaluated at the site of the concern (WBN) and found to be not valid. No other site evaluations were determined to be necessary.

Issue 310.04-5 - Two-party Verification Procedures Not Followed

WBN Evaluation

TVA has established procedure AI-2.1, "Authorities and Responsibilities for Safe Operation and Shutdown," which describes configuration control of critical safety-related equipment and AI-2.19, "Independent Verification," which details the systems requiring independent verification and how to accomplish the task. AI-2.1 states that the configuration control system shall consist of system status files where the latest performed system checklists are maintained along with deviations from normal system alignment. This procedure also states that this control system should be used at the discretion of the Operations Supervisor until initial systems alignment for fuel loading, at which time this control system requirement becomes mandatory.

At this time in construction, with fuel load scheduled for 1987, initial systems alignment has not been accomplished and configuration control is not required to be maintained. Thus the Operations supervisor has opted not to establish system status files with valve checklists for the configuration control program at this time.

Conclusion

The issue is factually accurate, but what it described is not a problem.

Generic Applicability

The WBN evaluation determined the issue of concern to be non-implementation of procedures written to prepare for fuel load. The system configuration status and associated two party verification is only required during hot functional testing and post fuel load at WBN. This is WBN site specific and no other site evaluations were determined to be necessary.

Issue 310.04-6 - Supervisor Directed Personnel to Violate Technical Specifications and Procedures

WBN Evaluation

The concern regarding the technical specifications violations and procedure violations that occurred during the performance of Surveillance Instruction, SI-4.0.5.43A during May 1985, was previously investigated by NSRS in Report I-85-302-WBN.

Surveillance instructions are mandated by the Code of Federal Regulation 10CFR50.55a (g) and established to meet technical specification criteria.

The SI involved was a full stroke exercising of a solenoid valve. The concern stated that a supervisor directed personnel to violate technical specifications and procedure by changing data.

The investigation revealed that the only data that had been changed was increasing the stroke time limit. This value is calculated using the stroke time from the previous test. The stroke time from the previous test was recorded in tenths of a second, whereas the SI stipulated data measured to the nearest second. The stroke time limit, or the acceptance criteria, for the data package in question was calculated using these tenth of a second measurements. The person conducting the test in question followed SI instructions by recording the measured stroke time greater than the acceptance criteria on the data package in question. This would dictate an increased surveillance frequency. Management agreed to change the previous stroke time to the nearest second, as dictated in the procedure, to eliminate the need for more frequent testing.

There was a procedural violation found in this investigation in that SI data had been incorrectly recorded. However, it was not directed by a supervisor. Therefore, this issue is not valid. The CI observed changes being made to the previous SI data that had been in error, and this action had not violated technical specifications.

Conclusion

The issue could not be validated.

Generic Applicability

The issue was evaluated at the site of the concern (WBN) and found to be not valid. No other site evaluations were determined to be necessary.

4.0 COLLECTIVE SIGNIFICANCE

A collective assessment of the element-level findings (Section 3.0) led to the identification of two subcategory-level findings specific to WBN. These findings were determined to reflect adversely on management effectiveness and dealt with problems with operational procedures and with plant system status as follows:

a. There have been several instances of inadequate operational procedures and of noncompliance with operational procedures at WBN.

b. The operations configuration control program at WBN appears to be deficient.

Operational Procedures Problems

With regard to the first finding, SOIs and SIs originally had been written without a writers guide and are now being revised to meet new writers guide requirements. Evaluation by the Industrial Safety Engineering Staff of the chemical transfer near-miss accident resulted in recommendations to revise the acid/caustic transfer procedure and a chemical procedure. Personnel did not adequately comply with a clearance procedure written to isolate valves in the radwaste systems, resulting in incomplete isolation boundaries. Condensate demineralizer control board log sheets have not been completed correctly and have not been forwarded for analysis of chemical results, in violation of procedures. A solenoid valve's stroke time was not recorded correctly in accordance with instructions in the applicable SI. Finally, there was a lack of procedural controls for the use of tygon tubing in abnormal configurations for water level measurement.

Deficient Operations Configuration Control Program

Control of plant system status at WBN has only been maintained during the previous two hot functional testing periods. During the second hot functional testing period in 1984, NRC identified three status file deficiencies and two deficiencies with the procedure that stipulates which systems require status maintained. In 1985, PQA identified problems on several system alignment walkdown surveys. The last survey performed still requires a follow-up survey which cannot be done until configuration control is re-established before fuel load.

To place this second subcategory finding in proper perspective, it should be noted that WBN is in a pre-operational mode. Given the complexities of this phase of a nuclear plant's life, deficiencies like those noted by the NRC and WBN's QA organization in WBN's operations configuration control program should not be considered unusual. In all likelihood these deficiencies would have been corrected by plant personnel as WBN gained organizational experience and moved towards the operational phase of life.

5.0 ROOT CAUSE, PRELIMINARY ANALYSIS

Sections 3.0 and 4.0 discussed the specific findings for each of the element evaluations of this subcategory and their collective significance. This section presents the results of the independent

review and analysis done on these specific element-level findings to identify the most frequently occurring and widespread root causes at the subcategory level. Patterns of recurring findings called symptoms were derived from the elements. These symptoms were tested for root causes, and the root causes for all elements were then analyzed collectively to identify which occurred most frequently and at the most sites. Details of the symptoms and root causes derived for each element are presented in Attachment D, "Summary of Symptoms and Root Causes."

The review and analysis of the symptoms and root causes taken collectively pointed to one significant subcategory-level root cause. This root cause dealt with the lack of adequate management control systems at WBN to ensure that operational procedures are complete, incorporate all technical requirements, and are implemented properly. This is demonstrated by inadequacies at WBN discussed in Issues 310.03-1 (Chemical Unloading Procedures), 310.03-2 (Control of Plant System Status), and 310.03-3 (Procedures Adherence and Valve Control). All issues required corrective action at WBN, and established that management control of Operations Procedures was inadequate.

Corrective Action Tracking Documents (CATDs) were not issued specifically on these subcategory-level root causes. It was believed that corrective actions being taken already by line management as part of the commitments made in the Nuclear Performance Plan were helping to address these root causes. However, line management was expected to use the subcategory-level root causes information as an aid in preparing corrective action responses to subcategory-level CATDs that would preclude recurrence of the deficiency noted. The ECTG's process for judging the adequacy of line corrective action responses to subcategory-level CATDs included a determination of how well the applicable root causes were addressed by the responses.

The significant root causes for all subcategories in the Operations category provided part of the input for determining programmatic areas of weakness at the category level and the associated causes. In the Operations category report, the programmatic weaknesses and associated causes are presented along with a discussion of how they are being corrected through implementation of the Nuclear Performance Plan and other corrective action programs.

6.0 CORRECTIVE ACTION

6.1 Corrective Action at Element Level

6.1.1 Element 310.01-Operation Programs/Procedures Inadequate

Although the concern regarding fuse identification was not validated, CATD-310.01-SQN-01 was issued to track the completion of the work plans on fuse identification and replacement. The concern was more a matter of convenience than a safety concern, but the workplans, when complete, will make fuse replacement a relatively simple procedure.

6.1.2 Element 310.02 - Operator Qualifications

CATD 310.02-SQN-01 was issued regarding operator QA training at SQN. Operations Section Instrument Letter OSLT-4 has not been used for QA training since OSLT-1 was revised to incorporate the QA training requirements. Periodic review of Section Instruction Letters is apparently not being performed. SQN has responded as follows:

"OSLT-4 will be reviewed and either revised or deleted as necessary. Anticipate 6 to 12 months to complete.

The procedures staff/group is reviewing TVA's programs and procedures. Sent a TVA 45D (Interoffice Mailing Slip) to Mildred McGuire to review and comment on the ECTG recommendation. (S53-860922 803) She is to respond to the recommendation within 6 months. We anticipate 6 to 12 months to complete this item."

As part of the ECTG's final closeout process for this corrective action plan, objective evidence will be sought to determine if performance improvement has been achieved by implementation of the corrective action.

6.1.3 Element 310.03-Operations Procedures Need Clarification, Rewritten,/and Used

CATDs 310.03-SQN-01, 310.03-BFN-01, and 310.03-BLN-01 were issued to track action taken to correct a lack of administrative controls on root valves to tygon tubing being used for level control. SQN has responded as follows:

"SOI-68.1B & SOI-74.1C and SI-673, concerning use of tygon tubing on RCS system during MODE 5 or 6 operation, is adequate since the level is monitored at all times.

SOI-67-1, ERCW system concerning laying up the CS heat exchanger, will be revised to add a note or caution to isolate the tygon tubing when it is not being monitored.

A CAUTION ORDER will be added to EHC tank operating instructions to isolate the tygon tubing when the level is not being locally monitored.

A memo will be written to Plant Maintenance to cover any use of tygon tubing not in Operations instructions such as WRs and their instructions."

The acceptable response received from BFN was as follows:

"Revise Standard Practice BF 14.25, Clearance Procedure, to require that tygon tubing utilized for temporary level indication which has the potential for being over-pressurized which would result in tubing rupture be controlled by a caution order. Although this is not a Unit 2 restart item, the revision will be issued by March 15, 1987."

As part of the ECTG's final closeout process for this corrective action objective evidence will be sought to determine if performance improvement has been achieved by implementation of the corrective action.

The acceptable response received from BLN was as follows:

As requested the subject CATD has been reevaluated in light of action implemented at other sites. A relook at the controls utilized at BLN for use of nonpermanent equipment (temporary) via use of the TACF is most adequate. Procedure BLO-1.1 delineates the requirements for explicit information to be noted for situations that may require immediate operator action and to note any limitations and/or action required during the period that the temporary observation exists. The effect, limitation(s), and/or actions are considered for all temporary features. To single out each special feature is inappropriate.

CATD 31003-WBN-01 was issued to WBN line management to track the implementation of the NSRS recommendation regarding training and retraining of craft/construction personnel on the plant clearance procedure. The acceptable WBN line management response was as follows:

"Training for craft/construction personnel on the Plant Clearance procedure, Administrative Instruction (AI) 2.12, will be developed by June 30, 1987. This training program will require a 2-year retraining frequency. (This item has been coordinated with the following organizations: Division of Nuclear Construction (DNC), Modifications, Operations Training, the plant sections, and Engineering and Technical Training)."

CATD 31003-WBN-02 was issued to track the closure of deficiencies noted in WB-CAR-85-20 regarding Operations Configuration Control Program. The acceptable WBN line management response was as follows:

"We do not agree that the corrective action report WB-CAR-85-20 should still be open. The deficiencies identified in the corrective action report do not still exist. Remedial corrective action to correct the identified misaligned valves was taken. The actions to prevent recurrence are complete.

However, the concern may have arisen for reasons other than the deficiencies of WB-CAR-85-20 still being open. (1) This corrective action report was originally closed with inadequate documentation to substantiate closure. See discrepancy report WB-DR-85-177. The corrective action report was originally closed to the surveillance schedule without documenting our review that the remedial corrective actions were complete and that the actions to prevent recurrence were complete. They were verified and they were complete. We wanted to test the effectiveness of the actions to prevent recurrence through a surveillance. However, the plant has never gone back under system configuration for us to test the effectiveness of the actions to prevent recurrence. We later determined that it was more properly the function of the surveillance schedule to track effectiveness verifications. We documented the verification of the remedial corrective action and the actions to prevent recurrence for WB-CAR-85-20 and closed WB-DR-85-177R. (2) The problem which was documented on the corrective action report was a recurring one (See corrective action report WB-CAR-85-16) and no review has been made to ensure the latest actions to prevent recurrence were effective.

Quality Surveillance Section (QSS) will perform a surveillance to verify the effectiveness of the actions to prevent recurrence on corrective action report WB-CAR-85-20 before licensing as a part of our operational readiness verifications."

As part of the ECTG's final closeout process for this corrective action objective evidence will be sought to determine if adequate configuration control has been achieved by implementation of the corrective action. |R2

6.1.4 Element 310.04-Procedure Violations

No corrective action was required for this element.

6.2 Corrective Action at Subcategory Level

No CATDs were issued to WBN line management for the two subcategory-level findings presented in section 5 since the responses received to element-level CATDs were considered adequate to resolve the subcategory-level findings.

7.0 ATTACHMENTS

Attachment A - Subcategory Summary Table

Attachment B - List of Concerns by Element/Issue

Attachment C - Checklist for Root Cause Analysis

Attachment D - Summary of Symptoms and Root Causes

Attachment E - Graph of Symptoms vs Root Cause

Attachment F - Bar Chart of Symptoms

Attachment G - Bar Chart of Root Causes

Attachment H - CATDs

Attachment I - List of Evaluators by Element/Plant

ATTACHMENT A

Subcategory Summary Table

REFERENCE - ECPS132J-ECPS132C
FREQUENCY - REQUEST
ONP - ISSS - RNM

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY

CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
EX -85-028-00101 T50122	OP	31003	N	WBN	1 N N N Y 2 NA NA NA NO	EX-85-028-001	QTC	CI IS CONCERNED THAT THE PROCEDURES FOR UNLOADING CHEMICALS ARE INADEQUATE AND COULD CAUSE PERSONNEL INJURIES AND DAMAGE TO THE PLANT. EXAMPLES GIVEN WERE SULFURIC ACID ALMOST UNLOADED INTO THE HYDRAZINE TANK (SPRING '85) AND A DIESEL FUEL SPILL DUE TO AN OVERFILLED DIESEL FUEL TANK. NUCLEAR POWER CONCERN. CI HAS NO ADDITIONAL INFORMATION.	3.3 310.03-1
EX -85-081-00201 T50186	OP	31002	N	WBN	1 N N N Y 2 NA NA NA NO	EX-85-081-002	QTC	REACTOR OPERATORS SHOULD BE WELL QUALIFIED. SELECTION SHOULD NOT DEPEND ON GOVERNMENT RACIAL QUOTAS. NUCLEAR POWER DEPT. CONCERN. CI HAS NO ADDITIONAL INFORMATION - GENERIC CONCERN.	3.2 310.02-1
IN -85-078-00101 T50066	OP	31002	N	WBN	1 N N N Y 2 NA NA NA SR	I-85-272-WBN	QTC	SOME UNIT OPERATORS, IN WBNP UNIT 1, MAY NOT BE AS KNOWLEDGEABLE AS THEY SHOULD BE CONCERNING SAFETY RELATED SYSTEMS. CI WOULD NOT PROVIDE NAMES OF INDIVIDUALS OR ANY ADDITIONAL INFORMATION.	3.2 310.02-2
IN -85-140-00101 T50088	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR	I-85-211-WBN	QTC	THE AMOUNT OF PAPER WORK PROCESSED THROUGH THE CONTROL ROOM AND SHIFT ENGINEER'S OFFICE- ESPECIALLY SURVEILLANCE INSPECTIONS - FOCUSES THE ATTENTION OF THE LICENSED OPERATORS AWAY FROM A VIGILANT WATCH OF PLANT STATUS AND CONDITIONS INTO MAKING SURE EVERYTHING IS PROPERLY FILLED OUT ON ALL THE MANY PAGES OF DATA.	3.1 310.01-8
IN -85-183-00101 T50155	OP	31004	N	WBN	1 N N N Y 2 NA NA NA NO	IN-85-183-001	QTC	OPERATORS ARE NOT FOLLOWING OPERATING PROCEDURES FOR CONDENSATE DEMINERALIZER LOCATED IN TURBINE BUILDING UNIT 1 AT EL. 669'-0" AND EL. 708'-0". ANY FURTHER INFORMATION WILL DIVULGE CONFIDENTIALITY. NUCLEAR POWER CONCERN. FOLLOWUP NOT REQUIRED.	3.4 310.04-3

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS132J-ECPS132C
FREQUENCY - REQUEST
ONP - ISSS - RWM

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY

CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-183-00201 T50155	OP	31004	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	OPERATORS ARE NOT FOLLOWING PROCEDURES FOR WET LAY-UP STORAGE. CHEMICAL REQUIREMENTS HAVE NOT BEEN FOLLOWED, I.E. CHEMISTRY DEPT. IS NOT NOTIFIED FOR VERIFYING PROPER CHEMISTRY IN VESSELS PLACED INTO SERVICE AND INTO WET LAY-UP. CI QUESTIONS AS TO HOW THE PLANT WILL OPERATE WHEN PROBLEMS ARE ARISING AT THE TIME OF HOT FUNCTIONAL TESTING. NUCLEAR POWER CONCERN. CI HAS NO FURTHER INFORMATION. FOLLOWUP NOT REQUIRED.	3.4 310.04-4
IN -85-196-00301 T50040	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR	IN-85-196-003	QTC	VALVE OPERATION CONTROL IS INADEQUATE AND CAUSES UNSAFE CONDITIONS. EXAMPLE: THE COOLANT POND FLOODED REPEATEDLY DUE TO LACK OF CLEARANCE CONTROL. CI HAS NO MORE INFORMATION.	3.1 310.01-5
IN -85-289-00101 T50167	OP	31002	N	WBN	1 N N Y Y 2 NA NA SS SS	I-85-736-WBN	QTC	OPERATORS HAVE ALREADY MADE ERRORS DURING HOT FUNCTIONAL TESTING IN UNIT 1, APPROXIMATELY ONE YEAR AGO (1984) WHICH WOULD HAVE BEEN SIGNIFICANT IF PLANT HAD BEEN OPERATING. CI EXPRESSED CONCERN REGARDING THE INADEQUATE QUALIFICATIONS & TRAINING OF OPERATORS. CI HAS NO FURTHER INFORMATION. CONSTRUCTION DEPT CONCERN.	3.2 310.02-2
IN -85-325-00601 T50052	OP	31002	N	WBN	1 N N N Y 2 NA NA NA SR	I-85-222-WBN	QTC	INADVERTENT VALVE OPERATION DURING UNIT #1 HOT FUNCTIONAL TESTING, RESULTING IN A NON-RADIOACTIVE WATER SPILL, WOULD HAVE CAUSED A RADIOACTIVE SPILL HAD THE PLANT BEEN IN OPERATION. IT WAS EXPRESSED THT VALVE CONTROL AND OPERATOR TRAINING HAVE NOT IMPROVED SINCE THE INCIDENT. NO DETAILS WERE PROVIDED.	3.2 310.02-2

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS132J-ECPS132C
FREQUENCY - REQUEST
ONP - ISSS - RWM

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CATEGORY: OP PLANT OPER. SUPPORT

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-363-00101 T50023	OP	31001	N	WBN	1 N N N Y 2 NA NA NA NO	IN-85-363-001	QTC	CRITICAL PERSONNEL (OPERATORS AND CHEMISTRY) ARE CHANGING SHIFTS EVERY WEEK. THE LENGTH OF TIME SPENT (1WEEK) ON A SHIFT DOES NOT ALLOW THE PERSONNEL TO BECOME ACCLIMATED TO THE SHIFT CAUSING DEGRADATION OF THEIR PERPORMANCE	3.1 310.01-2
IN -85-400-00301 T50018	OP	31002	N	WBN	1 N N N Y 2 NA NA NA NO	IN-85-400-003	QTC	POWER OPERATOR PERSONNEL ARE INADEQUATELY TRAINED, AND UNFAMILIAR WITH JOB REQUIREMENTS (PARTICULARLY FEMALE OPERATORS). THIS CONCERN IS BASED UPON PERSONAL OBSERVATIONS OF THE C/I, WHILE WORKING WITH THE SUBJECT PERSONNEL. A SPECIFIC CONCERN WAS EXPRESSED WITH REGARD TO MANUALLY OPERATED VALVES IN WHICH MANY OPERATORS DID NOT KNOW WHICH WAY TO TURN A HAND WHEEL TO OPEN OR CLOSE A VALVE. NO FURTHER SPECIFIC INFORMATION OR DETAILS ARE AVAILABLE.	3.2 310.02-2
IN -85-448-00201 T50034	OP	31001	N	WBN	1 N N N Y 2 NA NA NA NO	IN-85-448-002	QTC	CRAFT ELECTRICAL PERSONNEL MUST WORK ON EQUIPMENT WHICH IS SUPPOSED TO BE DE-ENERGIZED AND LOCKED (TO PREVENT INADVERTENT OPERATION), WITHOUT THE BENEFIT OF BEING ABLE TO PERSONALLY VERIFY THE LOCKED CONDITION OF THE EQUIPMENT, DUE TO THE BREAKERS BEING LOCATED IN THE CONTROLLED ACCESS AREA OF THE PLANT. THIS CAUSES CONCERN AMONG CRAFT.	3.1 310.01-7
IN -85-471-00101 T50035	OP	31002	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	OPERATORS LACK EXPERIENCE AND KNOWLEDGE OF NUCLEAR PLANTS. OPERATORS SOMETIMES OPEN VALVES THAT ARE OPEN TO THE PLANT AND FLOOD BUILDINGS. (NO SPECIFIC CASES GIVEN).	3.2 310.02-2
IN -85-478-00101 T50036	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	THE LACK OF A FORMALIZED "CRITIQUE PROCESS" (FOR OPERATIONAL PROBLEMS) ALLOWS PROBLEMS TO RECUR AND GROW WITHOUT BEING CORRECTED.	3.1 310.01-9

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-491-00101 T50029	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y NO	IN-85-491-001	QTC	PLANT OPERATORS SHOULD ONLY BE ALLOW ED TO WORK A CERTAIN NUMBER OF HOURS PER WEEK TO AVOID FATIQUE AND REMAI N ELERT	3 .1 310.01-2
IN -85-571-00101 T50109	IH	60300	S	WBN	1 N 2 NA	N NA	N NA	Y NO		QTC	UNQUALIFIED SHIFT ENGINEER (UNKNOWN) AND CARELESS SUPERVISOR (KNOWN) END ANGERED PERSONNEL SAFETY BY TELLING CI AND OTHER PERSONNEL THAT A HYDROG EN SYSTEM WAS READY FOR HYDRO TESTIN G (ISOLATED AND PROPERLY "CLEANED"). CI DISCOVERED SYSTEM WAS NOT ISOLA TED BECAUSE SHIFT ENGINEER DIDN'T KN OW HOW TO CLOSE VALVE (LARGE VALVE C OVERED WITH METAL POT, AND MANY BOLT S, OUTSIDE OF PLANT, EAST WALL, NEAR STEPS THAT PERSONNEL USE AS MAIN PL ANT ENTRANCE.) ENGINEERS (NOT KNOWN) ALSO WALKED LINE AND FOUND THA	3 .4 310.04-2
02	OP	31004	S	WBN	1 N 2 NA	N NA	N NA	Y NO				
03	SF	90110	S	WBN	1 Y 2 NO	N NA	Y NO	Y NO				
IN -85-616-00101 T50058	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y SR	I-85-211-WBN	QTC	EXCESSIVE PAPERWORK CAUSES REACTOR O PERATORS TO BE UNAVAILABLE FOR RUNNI NG THE PLANT FOR 2 HOURS EACH SHIFT. MUCH OF THIS PAPERWORK COULD BE DE LEGATED TO OTHER GROUPS WITH THE OPE RATORS HAVING OVERSIGHT.	3.1 310.01-8
IN -85-676-00201 T50063	IH	60400	S	WBN	1 N 2 NA	N NA	N NA	Y SR	I-85-302-WBN	QTC	SUPERVISOR (NAME KNOWN) DIRECTED PER SONNEL TO VIOLATE TECH. SPECIFICATIO NS AND PROCEDURES (EXAMPLES KNOWN).	3 .4 310.04-6
02	OP	31004	S	WBN	1 N 2 NA	N NA	N NA	Y SR				

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CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT 2 SAF BF	APPL RELATED BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-714-00101 T50070	OP	31001	S	SQN	1 N 2 NA	N NA	Y NO	N NA	IN-85-714-001	QTC	WHEN WORKING ON ELECTRICAL LINES, TH E SWITCH BOX CONTROLLING THOSE LINES SHOULD BE LOCKED. AT THE PRESENT T IME SWITCHBOXES ARE ONLY TAGGED. TH IS OCCURS SITE-WIDE. NO FOLLOW-UP R EQUIRED. (TRANSFERRED TO SQP-86-010-001. REF ERT:QTC86.2129-CONCERN WAS ADDRESSESED BY INDUSTRIAL SAFETY AND OPERATIONS CATEGORIES BEFORE TRANSF ER WAS DOCUMENTED, AND WILL NOT BE I NPUT TO GN CATEGORY.)	3.1 310.01-7
02	SF	90603	S	SQN	1 N 2 NA	N NA	Y NO	Y NO				
IN -85-745-00101 T50072	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y NO	IN-85-745-001	QTC	UNIT 1&2 OPERATORS AND AVO'S SHOULD ROTATE SHIFTS ONLY ONCE A MONTH RATH ER THAN EACH WEEK TO ALLOW TIME TO A DJUST TO SHIFT CHANGE AND AVOID FATI GUE.	3.1 310.01-2
IN -85-767-N0701	OP	31004	N	WBN	1 N 2 NA	N NA	N NA	Y SR		NRC	NRC IDENTIFIED THE FOLLOWING CONCERN RELATED TO IN-85-767-001 AND -006 F ROM REVIEW OF QTC FILE. "TVA HAS TO LD NRC PROCEDURES FOR TWO-PARTY VERI FICATION OF VALVE LINE-UPS EXISTS, N OT FOLLOWING SUCH A PROCEDURE."	3.4 310.04-5
IN -85-767-00601 T50170	OP	31002	N	WBN	1 N 2 NA	N NA	Y SR	Y SR		QTC	CI EXPRESSED THAT PLANT OPERATORS AR E NOT ADEQUATELY TRAINED TO NOR ABID E BY THE QA REQUIREMENTS OF PLANT PR OCEDURES. DETAILS KNOWN TO QTC, WIT HELD DUE TO CONFIDENTIALITY. CONSTR UCTION DEPT CONCERN. CI HAS NO FURT HER INFORMATION.	3.2 310.02-4
IN -85-792-00101 T50072	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y NO	IN-85-792-001	QTC	WORKING SWING SHIFT CAUSES PLANT OPE RATORS TO WORK UNDER TIRING CONDITIO NS. THE POSSIBILITY EXISTS THAT OPE RATORS COULD MAKE AN ERROR IN JUDGEM ENT DUE TO FATIGUE.	3.1 310.01-2

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CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-844-00101 T50090	OP	31002	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	PLANT OPERATORS SHOULD BE MORE KNOWL EDGEABLE OF THEIR RESPONSIBILITIES. AN EXAMPLE BEING, LAST WINTER ON CO NSECUTIVE DAYS. OPERATORS OPENED TH E WRONG VALVE IN RB #1 AND RELEASED APPROX 300 GAL. OF HYDROZENE.	3.2 310.02-2
IN -85-894-00101 T50156	OP	31002	N	WBN	1 N N Y Y 2 NA NA SS SS		QTC	PLANT OPERATORS ARE INADEQUATELY TRA INIED FOR THEIR POSITIONS. THE CI L ISTED SEVERAL INCIDENCES AS EXAMPLES . 1. AN OIL RING BLEW-UP WHILE REPL ACING FILTERS IN MECHANICAL MAINTENA NCE, DUE TO HEAD PRESSURE. 2. WOMEN OPERATORS DO NOT HAVE ENOUGH STRENG TH TO OPEN AND CLOSE ISOLATION VALVE S. CI HAD TO HELP MANY TIMES. 3. W HILE HOT FUNCTIONAL TESTING ABOUT A YEAR AGO, HYDROZINE SPILLED ALL OVER PEOPLE AND THE FLOOR IN SOUTH VALVE ROOM, UNIT 1, AUX. BUILDING, EL. 73 7'-0" DUE TO OPERATOR ERROR. CO	3.2 310.02-2
IN -85-910-00301 T50248	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	IDENTIFIED PROBLEMS ARE NOT RESEARCH ED TO DETERMINE ROOT CAUSE NOR IS PR OPER CORRECTIVE ACTION TAKEN. EXAMP LE: HYDRAZINE SPILL ON UNIT I WAS AL MOST 100% CONCENTRATION, BUT NO ONE DETERMINED WHERE IT CAME FROM, OR WH ERE HYDRAZINE WENT THAT DISAPPEARED FROM IN-PLANT STORAGE TANK. NO FURT HER INFORMATION IN FILE. NUCLEAR PO WER DEPARTMENT CONCERN. NO FOLLOW U P REQUIRED.	3.1 310.01-9

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CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-933-00101 T50153	OP	31001	N	WBN	1 N N Y Y 2 NA NA SR SR		QTC	TVA'S PROGRAM OF PLACING DEGREED ENGINEERS AS SENIOR REACTOR OPERATORS WITH ONLY 20 MONTHS OF PLANT EXPERIENCE WILL REDUCE THE LEVEL OF REATOR OPERATING SAFETY BY HAVING INDIVIDUALS IN CHARGE WHO DO NOT KNOW HOW TO REACT TO AND RESOLVE THE PRACTICAL PROBLEMS THAT WILL BE ENCOUNTERED DURING OPERATIONS. OPERATIONS CONCERN. CI HAS NO FURTHER INFORMATION. NO FOLLOW UP REQUIRED.	3.1 310.01-1
IN -85-933-00401 T50265	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	TVA'S TRAINING PROGRAM FOR THE DEGREED ENGINEERS WHO WILL BE LICENSED AS SENIOR REACTOR OPERATORS HAS THEM STANDING AROUND WATCHING INCONSEQUENTIAL THINGS (SUCH AS CHEM LAB ACTIVITIES) RATHER THAN LEARNING BY DOING (E.G., THESE TRAINEES ARE NOT BEING TAUGHT HOW TO START AND EXERCISE LOCAL CONTROL OVER MOTORS AND VALVES, AND ARE NOT REALLY LEARNING HOW THE PLANT'S SYSTEMS REALLY OPERATE). CI HAS NO FURTHER INFORMATION. NUCLEAR POWER CONCERN.	3.1 310.01-1
IN -85-933-00801 T50265	OP	31002	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	TVA HURTS OPERATOR TRAINING PROGRAMS BY ROTATING TRAINERS. TRAINERS ARE ASSIGNED ARBITRARILY, AND SOME OF THOSE ASSIGNED ARE EITHER UNWILLING OR UNABLE TO CONDUCT EFFECTIVE TRAINING. INADEQUACIES IN ONGOING TRAINING WILL AFFECT TVA'S ABILITY TO SAFELY OPERATE AND SHUT DOWN THEIR PLANTS, AND THIS WILL ENDANGER THE PUBLIC. DETAILS KNOWN TO QTC; WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFORMATION MAY BE RELEASED. NUCLEAR POWER CONCERN.	3.2 310.02-5

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS132J-ECPS132C
FREQUENCY - REQUEST
ONP - ISSS - RWM

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY

CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -85-933-01001 T50265	OP	31001	N	WBN	1 N N Y Y 2 NA NA SR SR		QTC	TVA SHOULD CONTINUE AND EXPAND ITS A LREADY ESTABLISHED PROGRAM OF HAVING EXPERIENCED OPERATIONS PERSONNEL GE T COLLEGE DEGREES TO BE LICENSED AS SENIOR REACTOR OPERATORS RATHER THAN IMPLEMENTING ITS MORE RECENT PLANT OF MAKING SRO'S OUT OF DEGREED ENGIN EERS WHO WILL HAVE NO ACTUAL HANDS-O N PLANT OPERATING EXPERIENCE. DETAI LS KNOWN TO QTC; WITHHELD TO MAINTAI N CONFIDENTIALITY. NO FURTHER INFOR MATION MAY BE RELEASED. NUCLEAR POW ER CONCERN.	3.1 310.01-1
IN -85-933-01601 T50265	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	TVA IS JEOPARDIZING PUBLIC SAFETY BY PLANNING TO ASSIGN PERSONNEL AS LIC ENSED SENIOR REACTOR OPERATORS WHO H AVE NO PRACTICAL OPERATING EXPERIENC E. THESE PERSONNEL COULD CAUSE EXTE NSIVE DAMAGE TO THE OPERATING PLANTS BECAUSE OF THEIR LACK OF PRACTICAL EXPERIENCE, AND THIS COULD MATERIALL Y AFFECT THE PLANT'S SAFE SHUTDOWN. CI HAS NO FURTHER INFORMATION. NUC LEAR POWER CONCERN.	3.1 310.01-1
IN -85-948-00401 T50103	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	PLANT OPERATORS DO NOT ALWAYS CHECK TO SEE IF A SYSTEM IS BEING WORKED O N BEFORE OPENING VALVES AND TURNING ON WATER. THIS COULD BE A SAFETY HA ZARD. CI HAS NO MORE INFORMATION AV AILABLE. NO FOLLOW UP REQUIRED.	3.1 310.01-5
IN -85-989-00301 T50104	OP	31001	N	WBN	1 N N N Y 2 NA NA NA NO		QTC	ROTATING SHIFT/ROTATING WORK DAY SCH EDULE HURTS MORALE AND IS NOT NECESS ARY (DEPARTMENT KNOWN). CI HAS NO F URTHER INFORMATION. NO FOLLOW UP RE QUIRED.	3.1 310.01-2
IN -86-015-00101 T50108	OP	31001	N	WBN	1 N N N Y 2 NA NA NA NO	IN-86-015-001	QTC	WORKING ROTATING SHIFTS DOES NOT ALL OW EMPLOYEES TO BE AT THEIR PHYSICAL AND MENTAL BEST. CI HAS NO FURTHER INFORMATION NO FOLLOW UP REQUIRED	3.1 310.01-2

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CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -86-055-00301 T50114	OP	31003	N	WBN	1 Y 2 SR	Y SR	Y SR	Y SR	I-85-415-WBN	QTC	1984. 300 GALLONS OF HYDRZINE SPILLED IN RB #1, LOWER CONTAINMENT. THIS IMPLIES CONCERN WITH INADEQUACIES IN PLANT OPERATIONS/PROCEDURE ADHERENCE/CONTROL OF VALVE & SYSTEMS OPERATION. CI HAS NO FURTHER INFORMATION. NUCLEAR POWER CONCERN.	3.3 310.03-3
IN -86-062-00101 T50119	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y NO		QTC	PLANT OPERATORS DO NOT TAKE THEIR JOB SERIOUS ENOUGH FOR OTHERS TO HAVE CONFIDENCE IN THEIR ABILITY TO OPERATE THE PLANT. AN EXAMPLE WAS GIVEN OF AN OPERATOR WHO LAUGHED WHEN AN ERROR WAS MADE CASUING A TANK TO OVERFLOW BECAUSE THE OPERATOR DID NOT KNOW WHICH VALVE TO CLOSE. CI HAS NO FURTHER INFORMATION. NUCLEAR POWER CONCERN.	3.1 310.01-5
IN -86-081-00101 T50118	OP	31003	N	WBN	1 N 2 NA	N NA	N NA	Y SR	I-85-381-WBN	QTC	CONTROL OF PLANT SYSTEM STATUS IS INADEQUATE, AND PRESENTS A POTENTIAL PERSONNEL HAZARD. DETAILS KNOWN TO QTC, WITHELD DUE TO CONFIDENTILITY. NUCLEAR POWER CONCERN. TIME FRAME MARCH/APRIL 1985. CI HAS NO FURTHER INFORMATION.	3.3 310.03-2
IN -86-111-00201 T50126	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y NO	IN-86-111-002	QTC	COORDINATION BETWEEN OPERATIONS AND PSO EMERGENCY TEAM IS LACKING. POOR COMMUNICATION AND PLANNING IS EVIDENT. DURING DRILLS, DIFFERENT GATES ARE OPEN FOR DIFFERENT PERSONNEL, CAUSING CONFUSION AND CONFRONTATION. CI HAS NO FURTHER INFORMATION. NUC POWER CONCERN.	3.1 310.01-10

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SUBCATEGORY: 310 OPERATIONS/OPERATIONAL

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -86-209-01301 T50218	OP	31002	N	WBN	1 N N Y Y 2 NA NA SR SR		QTC	SINCE THE PLANT OPERATOR TRAINING WA S CONDUCTED AT THE SAME TRAINING CEN TER, UNDER THE SAME MANAGEMENT AS TH E STA (SHIFT TECHNICAL ADVISOR) PROG RAM; THE QUALITY OF THE OPERATOR TRA INING THAT STARTED APPROXIMATELY 10 YEARS AGO MAY HAVE BEEN AS INADEQUAT E AS THE STA TRAINING. CI HAS NO AD DITIONAL INFORMATION. NUC. POWER DE PT. CONCERN.	3 .2 310.02-6
IN -86-227-00101 T50138	OP	31001	N	WBN	1 N N N Y 2 NA NA NA NO	IN-86-227-001	QTC	CI RECOMMENDS THAT PLANT OPERATORS B E REQUIRED TO WORK A 12 HOUR SHIFT W HEN CHANGING FROM THE MID-NIGHT SHIF T TO THE DAY SHIFT. CURRENTLY THEY ARE WORKING A 16 HOUR SHIFT (DOUBLIN G). THIS IS HAZARDOUS TO THEIR HEAL TH AND THEY ARE NOT ALERT ENOUGH TO CARRY A SECOND SHIFT. CI HAS NO MOR E INFORMATION. NUC. POW. DEPT CONCE RN. NO FOLLOW UP REQUIRED.	3 .1 310.01-2
IN -86-247-00101 T50218	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	CONTROL ROOM PERSONNEL DO NOT ALWAYS RESPOND TO FIRE ALARMS ACCORDING TO PROCEDURE. WHEN AN ALARM SOUNDS IN THE CONTROL ROOM IT IS TURNED OFF, AND NO ONE NORMALLY GOES TO THE AREA TO INVESTIGATE THE REASON FOR THE A LARM. THE LOCAL AREA ALARM CONTINUE S TO ALARM UNTIL SOMEONE CALLS THE C ONTROL ROOM AND REQUESTS THEY SEND S OMEONE TO THE AREA AND RESET THE ALA RM. THESE ALARMS SOMETIMES ALARM FO R DAYS WITHOUT ANYONE CHECKING THEM OUT. A SERIOUS FIRE THREAT EXISTS A S A RESULT OF THIS ATTITUDE. CI	3 .1 310.01-3

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CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT BF	2 SAF RELATED BL	SQ	WB	APPL	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
IN -86-287-00201 T50178	OP	31004	N	WBN	1 N 2 NA	N NA	N NA	Y NO		IN-86-287-002	QTC	IN APRIL 1985, APPROXIMATELY 250 GAL LONS OF DIESEL OIL WAS SPILLED ON FL OOR OF #5 DIESEL ROOM. THE OIL WAS FLUSHED INTO THE DRAINS AND RETENTIO N PONDS. THE CLEAN UP EFFORT WAS NO T PER PROCEDURE AND THE OIL WAS RELE ASES INTO THE RIVER. DETAILS KNOWN TO QTC, WITHHELD DUE TO CONFIDENTIAL ITY. CI HAS NO FURTHER INFORMATION. CONSTRUCTION DEPT CONCERN.	3 .4 310.04-1
IN -86-291-00801 T50147	OP	31001	N	WBN	1 N 2 NA	N NA	N NA	Y SR			QTC	IN THE EVENT THERE IS AN EMERGENCY W HEN THE PLANT IS OPERATING THE APPRO PRIATE PERSONNEL DO NOT ALWAYS HAVE THE NECESSARY HELP READILY AVAILABLE . (DETAILS KNOWN TO QTC AND WITHHEL D TO MAINTAIN CONFIDENTIALITY). NUC LEAR POWER CONCERN. CI HAS NO FURTH ER INFORMATION. NO FOLLOWUP REQUIRE D.	3 .1 310.01-6
SQM-86-013-00201 T50268	OP	31001	N	SQN	1 N 2 NA	N NA	Y NO	N NA			QTC	AN ITEMIZED LIST FOR THE PROPER SIZE VOLTAGE, AMPERAGE, AND TYPE OF BULB S AND FUSES NEEDS TO BE AVAILABLE TO OPERATIONS FOR ALL EQUIPMENT UNDER THEIR CONTROL. NUCLEAR POWER CONCER N. ANONYMOUS CONCERN.	3.1 310.01-12
SQP-85-003-00101 T50227	OP	31001	N	SQN	1 N 2 NA	N NA	Y SS	N NA		I-85-137-SQN	QTC	SEQUOYAH - ON THE EVENING OF 12-9-85 , AN ELECTRICIAN OPERATED A VALVE IN THE UNIT 2 RHR HEAT EXCHANGER ROOM WITHOUT A UNIT OPERATOR PRESENT. TH IS CAUSED A SPILL (UNKNOWN AMOUNT) O F WHAT THE CI DESCRIBED AS "REACTOR GRADE" (HIGHLY RADIOACTIVE) WATER IN TO THE ROOM. THE SPILL WAS SECURED BY A HEALTH PHYSICS TECHNICIAN WHO H APPENED TO BE IN THE AREA. CI STATE D THAT IT WAS ALLEGED THAT A UNIT OP ERATOR HAD TOLD THE ELECTRICIAN TO G O AND SEPARATE THE VALVE, AND THAT U NIT OPERATORS ARE NOT AUTHORIZED	3.1 310.01-11

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CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
SQP-85-003-00201 T50227	MP	71009	S	SQN	1 N N N N 2 NA NA NA NA	I-85-137-SQN	QTC	SEQUOYAH - CI EXPRESSED THAT MANAGEMENT/SUPERVISION HAVE AN ATTITUDE OF "'HURRY UP AND GET THE JOB DONE" IN AN EFFORT TO GET THE PLANT ON LINE. CI FEELS THAT PROCEDURES ARE NOT BEING FOLLOWED IN AN EFFORT TO ACCOMPLISH WORK AS QUICKLY AS POSSIBLE, AND EVIDENCED THIS BY THE RADIOACTIVE WATER SPILL WHICH OCCURRED ON 12-9-85, AND ADDRESSED IN THIS FILE, CONCERN 001. CI HAS NO FURTHER INFORMATION, AND IS ANONYMOUS.	3.1 310.01-11
02	OP	31001	S	SQN	1 N N Y N 2 NA NA SS NA				
SQP-86-010-00101 T50272	OP	31001	S	SQN	1 N N Y N 2 NA NA NO NA		QTC	WHILE WORKING AT SEQUOYAH IN 1973 ON ELECTRICAL LINES, THE SWITCH BOX CONTROLLING THESE LINES WAS ONLY TAGGED. TO ENHANCE PERSONNEL SAFETY, CI FEELS THAT THE SWITCH BOXES SHOULD HAVE BEEN LOCKED AND THE ELECTRICIAN WORKING ON THE ELECTRICAL LINES SHOULD HAVE THE KEY TO THE LOCK ON THE SWITCH BOX. CI HAS NO ADDITIONAL INFORMATION. CONSTRUCTION DEPARTMENT CONCERN.	3.1 310.01-7
02	SF	90603	S	SQN	1 N N Y Y 2 NA NA NO NO				
WBP-86-014-00101 T50244	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	CI QUESTIONS THE METHOD OF KICKING A SWITCH IN THE CONTROL ROOM TO SHUT OFF THE AUDIBLE PART OF AN ALARM RATHER THAN HAND MANUPULATION. (NAMES/DETAILS KNOWN). NUCLEAR POWER DEPARTMENT CONCERN. CI HAS NO FURTHER INFORMATION.	3.1 310.01-3
WBP-86-023-00101 T50269	OP	31001	N	WBN	1 N N N Y 2 NA NA NA SR		QTC	THE RESPONSE TO IN-85-491-001 PROVIDED BY TVA DOES NOT REFLECT THE REGULATORY REQUIREMENTS NOR THE TVA COMMITMENTS TO THOSE REQUIREMENTS. NO ADDITIONAL INFORMATION AVAILABLE. NUCLEAR POWER DEPARTMENT CONCERN.	3.1 310.01-2

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CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT 2 SAF RELATED BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
WI -85-060-00101 T50149	OP	31002	N	WBN	1 Y 2 NO	Y NO	Y NO	Y NO		QTC	SHIFT ENGINEERS (SE) AND ASSISTANT SHIFT ENGINEERS (ASE) ARE INADEQUATELY TRAINED IN ELECTRICAL STATION OPERATION (SWITCH YARD, OFF-SITE POWER FEED, ETC.) SUCH THAT THERE COULD BE AN EXCESSIVE DELAY IN RESTORING OFF SITE POWER FEED INTO WBNP IN THE EVENT OF AN EMERGENCY. C/I FEELS THAT SE/ASE PERSONNEL SHOULD RECEIVE BETTER TRAINING IN THIS AREA. C/I HAS NO FURTHER INFORMATION. NO FOLLOW-UP REQUIRED.	3.2 310.02-7
XX -85-007-00201 T50086	MP	70605	S	SQN	1 N 2 NA	N NA	N NA	N NA	I-85-372-SQN	QTC	SEQUOYAH - LEAK IN APRIL 1983 IN UNIT 2 REACTOR WAS DUE TO MANAGEMENT'S (NAME KNOWN) DESIRE TO BREAK TIME RECORDS (179 DAYS ON LINE). RESULT WAS CONTAMINATION OF 500-600 GALLONS. CI HAS NO FURTHER INFORMATION.	3.1 310.01-13
02	OP	31001	S	SQN	1 N 2 NA	N NA	Y SR	N NA				
XX -85-022-00101 T50039	OP	31001	N	SQN	1 N 2 NA	N NA	Y SR	N NA		QTC	OPERATORS AT SEQUOYAH SHOULD SHOW MORE CONCERN & EXERCISE MORE CAUTION WHEN TAGGING OUT VALVES. WHILE REMOVING TEST CONN & INSTALLING BLIND FLG @ RC PMP #2, OPERATORS STARTED FILLING SYS WHILE CRAFT WAS STILL WORKING. THIS OCCURRED IN SEPTEMBER 1984. NAMES ARE KNOWN	3.1 310.01-5
XX -85-048-00201 T50073	OP	31002	N	SQN	1 N 2 NA	N NA	Y SS	N NA	XX-85-048-002	QTC	AT SEQUOYAH, THE MAJOR RESPONSIBILITY FOR FIREFIGHTING HAS BEEN TURNED OVER FROM PUBLIC SAFETY SERVICE TO THE FIRE BRIGADE. SINCE MOST PUBLIC SAFETY OFFICERS HAVE BEEN TRAINED IN THE STATE FIRE TRAINING SCHOOL AND THE FIRE BRIGADE HAVE NOT, C/I FEELS THAT THE FIRE BRIGADE'S LACK OF EXPERTISE WILL POSE A FIRE PROTECTION PROBLEM AT SEQUOYAH. C/I STATED THAT AT BROWN'S FERRY N.P., PUBLIC SAFETY WAS CHOSEN TO PROVIDE FIRE PROTECTION SERVICES AND QUESTIONS WHY SEQUOYAH DID NOT. NO FOLLOW-UP REQUIR	3.2 310.02-8

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CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
XX -85-067-00101 T50194	OP	31001	N	SQN	1 N N Y N 2 NA NA SR NA	I-85-862-SQN	QTC	SEQUOYAH - SMALL PROBLEMS IN PLANT OPERATION WERE DISREGARDED (1983), AND THE PLANT (UNIT 1) WAS KEPT OPERATING AS IF IN A RACE, WHICH RESULTED IN BIGGER PROBLEMS. NUC. POWER DEPT. CONCERN. CI HAS NO FURTHER INFORMATION AND HAS EXPRESSED THIS AS A GENERIC CONCERN.	3.1 310.01-9
XX -85-093-00101 T50149	OP	31002	N	SQN	1 Y Y Y Y 2 NO NO NO NO	I-85-619-SQN	QTC	SEQUOYAH: SHIFT ENGINEERS (SE) AND ASSISTANT SHIFT ENGINEERS (ASE) ARE INADEQUATELY TRAINED IN ELECTRICAL STATION OPERATION (SWITCHYARD, OFF-SITE POWER FEED, ETC.) SUCH THAT THERE COULD BE AN EXCESSIVE DELAY IN RESTORING OFF SITE POWER FEED TO THE PLANT IN THE EVENT OF AN EMERGENCY. C/I FEELS THAT SE/ASE PERSONNEL SHOULD RECEIVE BETTER TRAINING IN THIS AREA. C/I HAS NO FURTHER INFORMATION. NO FOLLOW-UP REQUIRED.	3.2 310.02-7
XX -85-093-00201 T50149	OP	31002	N	BLN	1 Y Y Y Y 2 NO NO NO NO	I-85-620-BLN	QTC	BELLEFONTE: SHIFT ENGINEERS (SE) AND ASSISTANT SHIFT ENGINEERS (ASE) ARE INADEQUATELY TRAINED IN ELECTRICAL STATION OPERATION (SWITCHYARD, OFF-SITE POWER FEED, ETC.) SUCH THAT THERE COULD BE AN EXCESSIVE DELAY IN RESTORING OFF SITE POWER FEED TO THE PLANT IN THE EVENT OF AN EMERGENCY. C/I FEELS THAT SE/ASE PERSONNEL SHOULD RECEIVE BETTER TRAINING IN THIS AREA. C/I HAS NO FURTHER INFORMATION. NO FOLLOW-UP REQUIRED.	3.2 310.02-7

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

CATEGORY: OP PLANT OPER. SUPPORT
SUBCATEGORY: 310 OPERATOR QUALIFICATIONS

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION # CAT - OP SUBCAT - 310 Section/Issue
XX -85-093-00301 T50149	OP	31002	N	BFN	1 Y Y Y Y 2 NO NO NO NO	I-85-621-BFN	QTC	BROWN'S FERRY: SHIFT ENGINEERS (SE) AND ASSISTANT SHIFT ENGINEERS (ASE) ARE INADEQUATELY TRAINED IN ELECTRIC AL STATION OPERATION (SWITCHYARD, OF F-SITE POWER FEED, ETC.) SUCH THAT T HERE COULD BE AN EXCESSIVE DELAY IN RESTORING OFF SITE POWER FEED TO THE PLANT IN THE EVENT OF AN EMERGENCY. C/I FEELS THAT SE/ASE PERSONNEL SH OULD RECEIVE BETTER TRAINING IN THIS AREA. C/I HAS NO FURTHER INFORMATI ON. NO FOLLOW-UP REQUIRED.	3.2 310.02-7

57 CONCERNS FOR CATEGORY OP SUBCATEGORY 310

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

ATTACHMENT B

List of Concerns by Element/Issue

The Operations/Operational Subcategory (31000) is comprised of 57 concerns grouped into four elements addressing a total of 30 issues.

Element 310.01 - Operation Programs/Procedures Inadequate

Issue 310.01-1 - Degreed Engineer SRO License Training Program Versus Experienced Operator Degree Program

IN-85-933-001 IN-85-933-010
IN-85-933-004 IN-85-933-016

Issue 310.01-2 - Rotating Shifts Causes Fatigue and Operator Errors

IN-85-363-001 IN-85-989-003
IN-85-491-001 IN-86-015-001
IN-85-745-001 IN-86-227-001
IN-85-792-001 WBP-86-023-001

Issue 310.01-3 - Operators Not Responsive to Fire Alarms

IN-86-247-001
WBP-86-014-001

Issue 310.01-4 - Plant Operators Do Not Take Jobs Seriously

IN-86-062-001*

Issue 310.01-5 - Valve Operation Control is Inadequate

IN-85-196-003 IN-86-062-001*
IN-85-948-004 XX-85-022-001

Issue 310.01-6 - Shift Staffing Inadequate for Emergencies

IN-86-291-008

Issue 310.01-7 - Clearance Procedures for Electrical Work Inadequate

IN-85-448-002
IN-85-714-001 (transferred to SQP-86-010-001 by QTC)
SQP-86-010-001 (was IN-85-714-001)

*Concerns evaluated in more than one issue

ATTACHMENT B

List of Concerns by Element/Issue
(Cont'd)

Issue 310.01-8 - Control Room Paperwork is Excessive

IN-85-140-001
IN-85-616-001

Issue 310.01-9 - Corrective Action for Identified Problems is Inadequate

IN-85-478-001
IN-85-910-003
XX-85-067-001

Issue 310.01-10 - Coordination Between Operations and PSO Emergency Team is Lacking

IN-86-111-002

Issue 310.01-11 - Violation of Procedures Caused Contaminated Water Spill

SQP-85-003-001
SQP-85-003-002

Issue 310.01-12 - Operations Should Have Itemized Bulb and Fuse List

SQM-86-013-002

Issue 310.01-13 - Reactor Coolant Leak Caused by Management Desire to Break Time Records

XX-85-007-002

<u>Element 310.02 - Operator Qualifications</u>

Issue 310.02-1 - Reactor Operator Selections Should Not Be Subject to Racial Quotas

EX-85-081-002

Issue 310.02-2 - Operator Qualifications and Training Inadequate

IN-85-078-001
IN-85-289-001
IN-85-325-006
IN-85-400-003*
IN-85-471-001
IN-85-844-001
IN-85-894-001*

*Concerns evaluated in more than one issue

ATTACHMENT B

List of Concerns by Element/Issue
(Cont'd)

Issue 310.02-3 - Female Operators Unable to Perform Adequately

IN-85-400-003*
IN-85-894-001*

Issue 310.02-4 - Operator QA Training Inadequate

IN-85-767-006

Issue 310.02-5 - Operator Training Hurt by Rotating Trainers

IN-85-933-008

Issue 310.02-6 - Plant Operator Training May Be Inadequate

IN-86-209-013

Issue 310.02-7 - Shift Engineer Training in Electrical Station Operation is Inadequate

WI-85-060-001 XX-85-093-002
XX-85-093-001 XX-85-093-003

Issue 310.02-8 - Fire Brigade Training Inadequate

XX-85-048-002

<u>Element 310.03 - Operations Procedures Need Clarification, Rewritten, and Used</u>

Issue 310.03-1 - Chemical Unloading Procedures Inadequate

EX-85-028-001

Issue 310.03-2 - Control of Plant System Status is Inadequate

IN-86-081-001

Issue 310.03-3 - Procedures Adherence and Valve Control Inadequate

IN-86-055-003

*Concerns evaluated in more than one issue

ATTACHMENT B

List of Concerns by Element/Issue
(Cont'd)

Element 310.04 - Procedure Violations

Issue 310.04-1 - Oil Spill Cleanup Not Per Procedure

IN-86-287-002

Issue 310.04-2 - Test Clearance Given by Unqualified Person

IN-85-571-001

Issue 310.04-3 - Procedures for Condensate Demineralizer Violated

IN-85-183-001

Issue 310.04-4 - Steam Generator Chemistry Control Inadequate

IN-85-183-002

Issue 310.04-5 - Two-party Verification Procedures Not Followed

IN-85-767-N07

Issue 310.04-6 - Supervisor Directed Personnel to Violate Technical Specifications and Procedures

IN-85-676-002

*Concerns evaluated in more than one issue

ATTACHMENT C

Checklist for Root Cause Analysis

1. Procedure lacks specifics to perform task.
2. Personnel lack sufficient training in the applicability/use of procedure.
3. Lack of understanding regulatory requirements or commitments.
4. Lack of adequate system, process, or administrative controls to ensure commitments are reflected in procedures or processes.
5. Inadequate communication within functional group.
6. Inadequate communication between functional groups.
7. Management Assumed Risk.
8. Procedures incomplete or failed to incorporate all technical requirements.
9. Error in judgment by qualified individual.
10. Unqualified individual performing the task.
11. Insufficient time to perform task.
12. Inadequate prerequisites defined to ensure satisfactory completion of task.
13. Personnel performed task knowingly in violation of procedure/process.
14. Personnel error in following procedures.
15. Failed to identify root cause of previous deficiencies.
16. Failed to take appropriate action to preclude reoccurrence.
17. Inadequate process to detect adverse trends.
18. Inadequate acceptance criteria defined to ensure satisfactory task completion.
19. Management attentiveness to trends.
20. Lack of accessibility to documentation.
21. Inadequate controls for review of results to ensure compliance with commitments.
22. Timeliness of changes to commitments or changes to licensing/regulatory requirements.
23. Isolated incident.
24. Random error.
25. Other - i.e., equipment related failure.

ATTACHMENT D

SUMMARY OF SYMPTOMS AND ROOT CAUSES

Element 310.01, Operations Programs/Procedures Inadequate

For this element, there were potential negative findings at the subcategory level exhibited by the symptom of inadequate operational practices. The applicable root cause was determined to be an error in judgment by a qualified individual. This root cause is supported by the element-level finding of SQN Operation's practice of allowing equipment to be operated by nonoperations personnel.

Element 310.03, Operations Procedures Need Clarification, Rewritten, and Used

For this element, there were potential negative findings at the subcategory level exhibited by the symptom of adequacy of operational control of temporary alterations. The applicable root cause was determined to be that procedures are incomplete or fail to incorporate all technical requirements. This root cause is supported by element level findings at SQN and BFN. It was found that these plants have no procedural controls for the proper selection, installation, and use of tygon tubing for temporary level indication.

The analysis of the symptoms and root causes of the subcategory is depicted graphically in Attachments D, E, and F. Attachment D is a plot of each element's symptoms versus the root cause pointed out by the symptom. Root cause numbers on the horizontal axis correspond to the 25 items on the "Checklist for Root Cause Analysis" found in Attachment C. Attachment E contains bar graphs showing the number of times each of the symptoms identified for the subcategory occurs for the various plants. Symptoms as listed in attachment D. Attachment F contains bar graphs showing the number of times each root cause appears in the subcategory for the various plants.

ATTACHMENT E

SYMPTOMS VS ROOT CAUSES

SUBCATEGORY 310

Symptoms

1. Inadequate operational practices (unauthorized valve manipulation)
2. Inadequate operational control (temporary alterations)

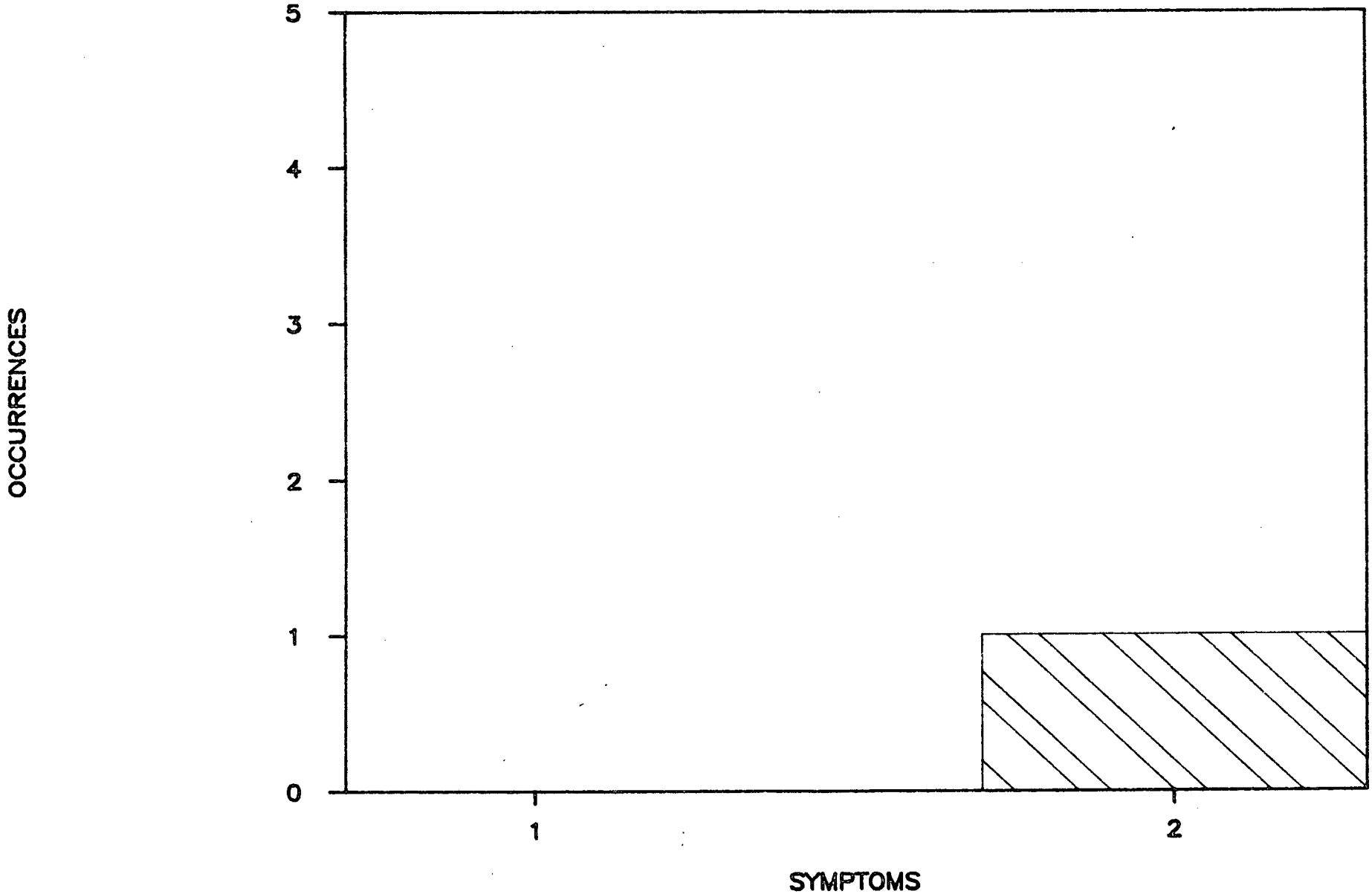
SYMPTOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Element 310.03								W B S																
Element 310.01									S															

ROOT CAUSES

KEY: W = WBN
S = SQN
B = BFN
L = BLN

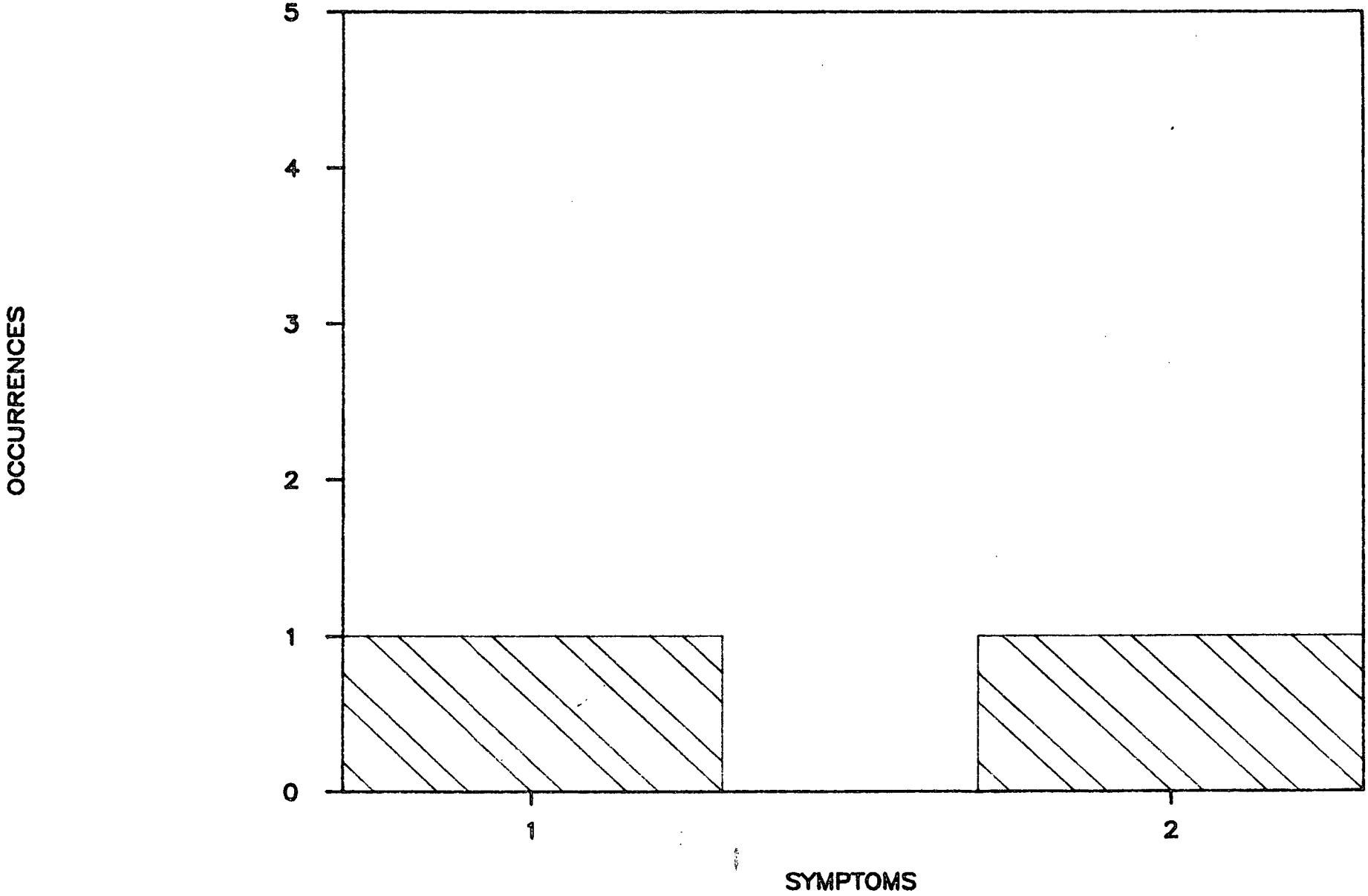
OCCURRENCES VS SYMPTOMS

WATTS BAR NUCLEAR PLANT



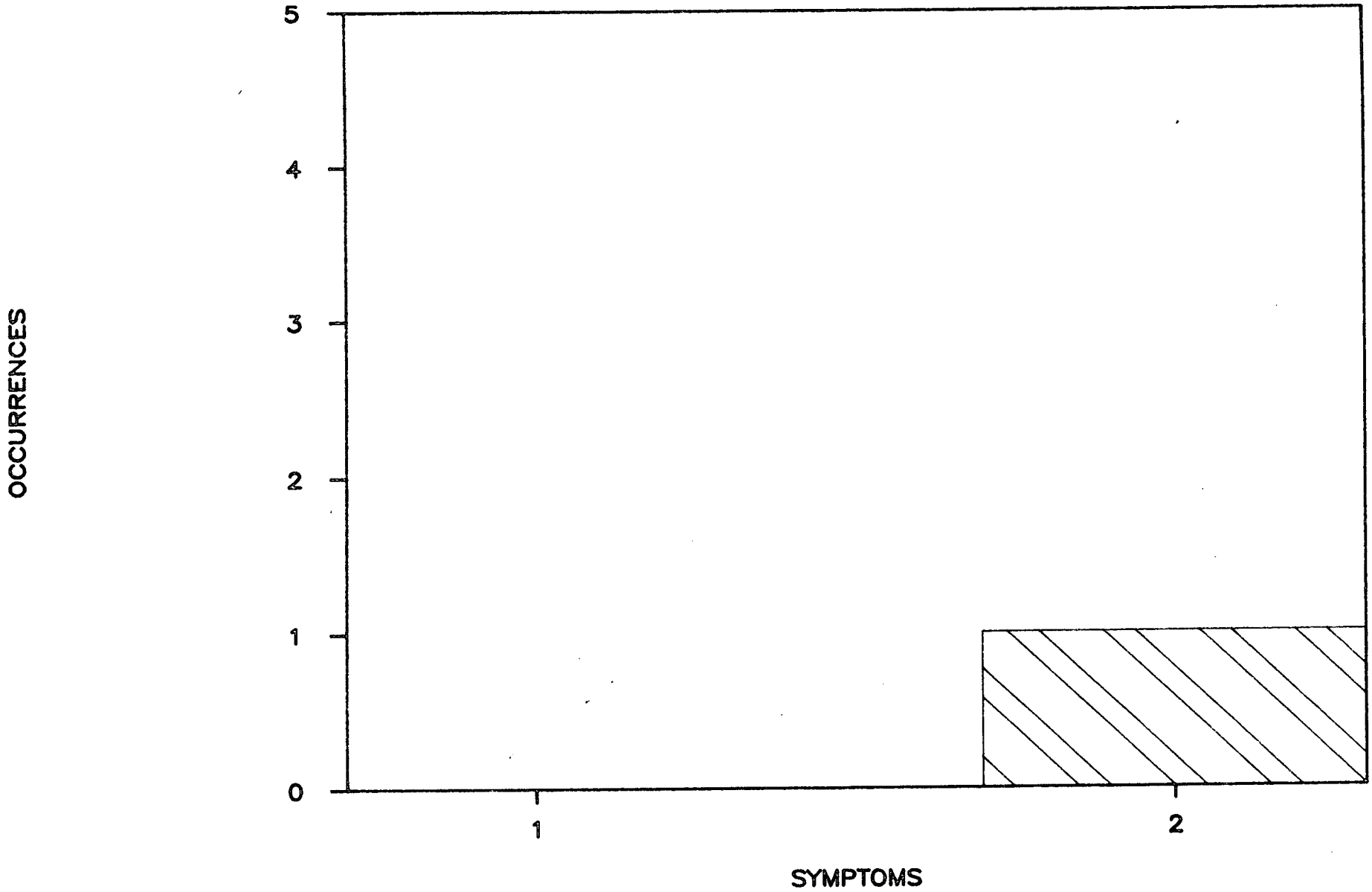
OCCURRENCES VS SYMPTOMS

SEQUOYAH NUCLEAR PLANT

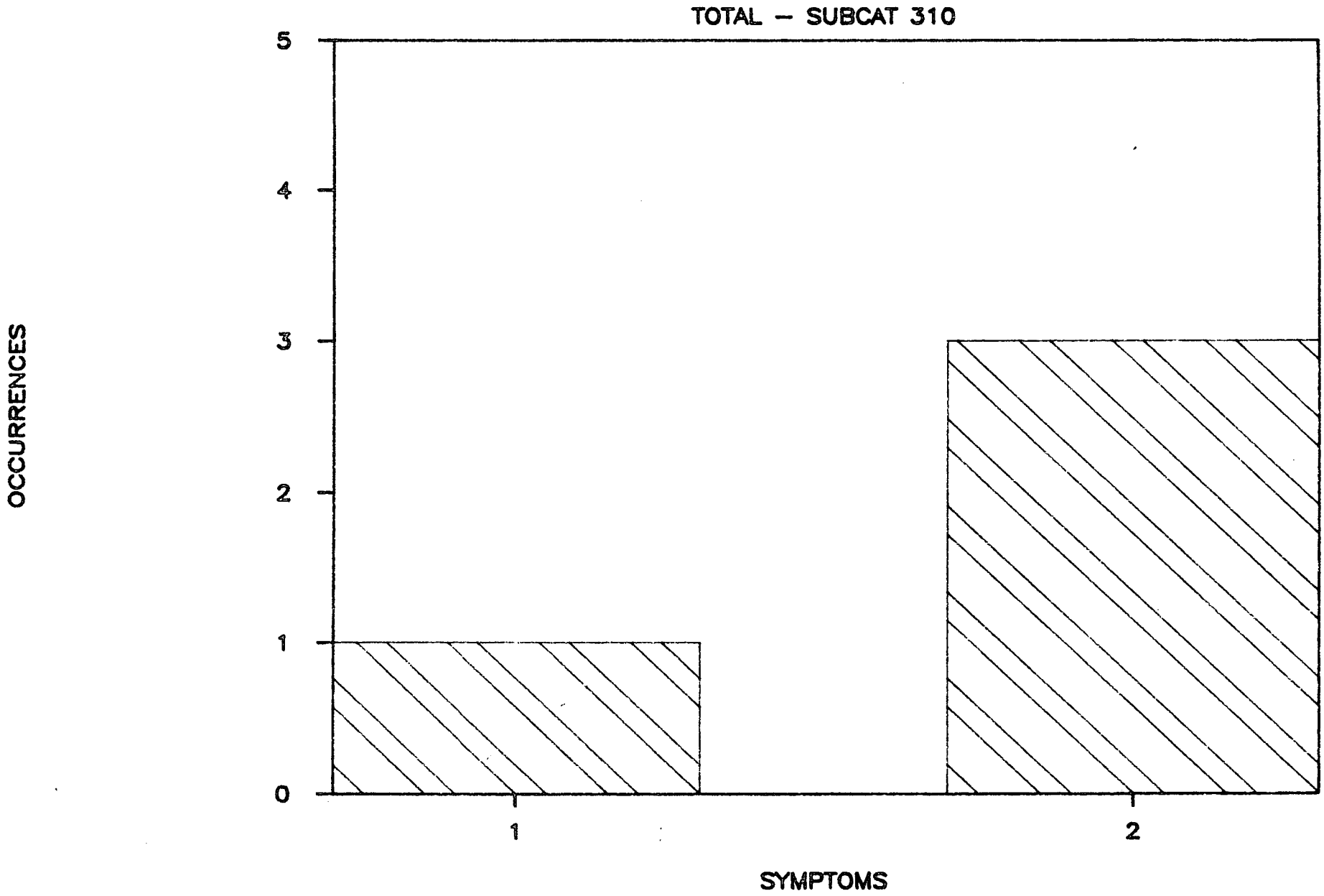


OCCURRENCES VS SYMPTOMS

BROWNS FERRY NUCLEAR PLANT

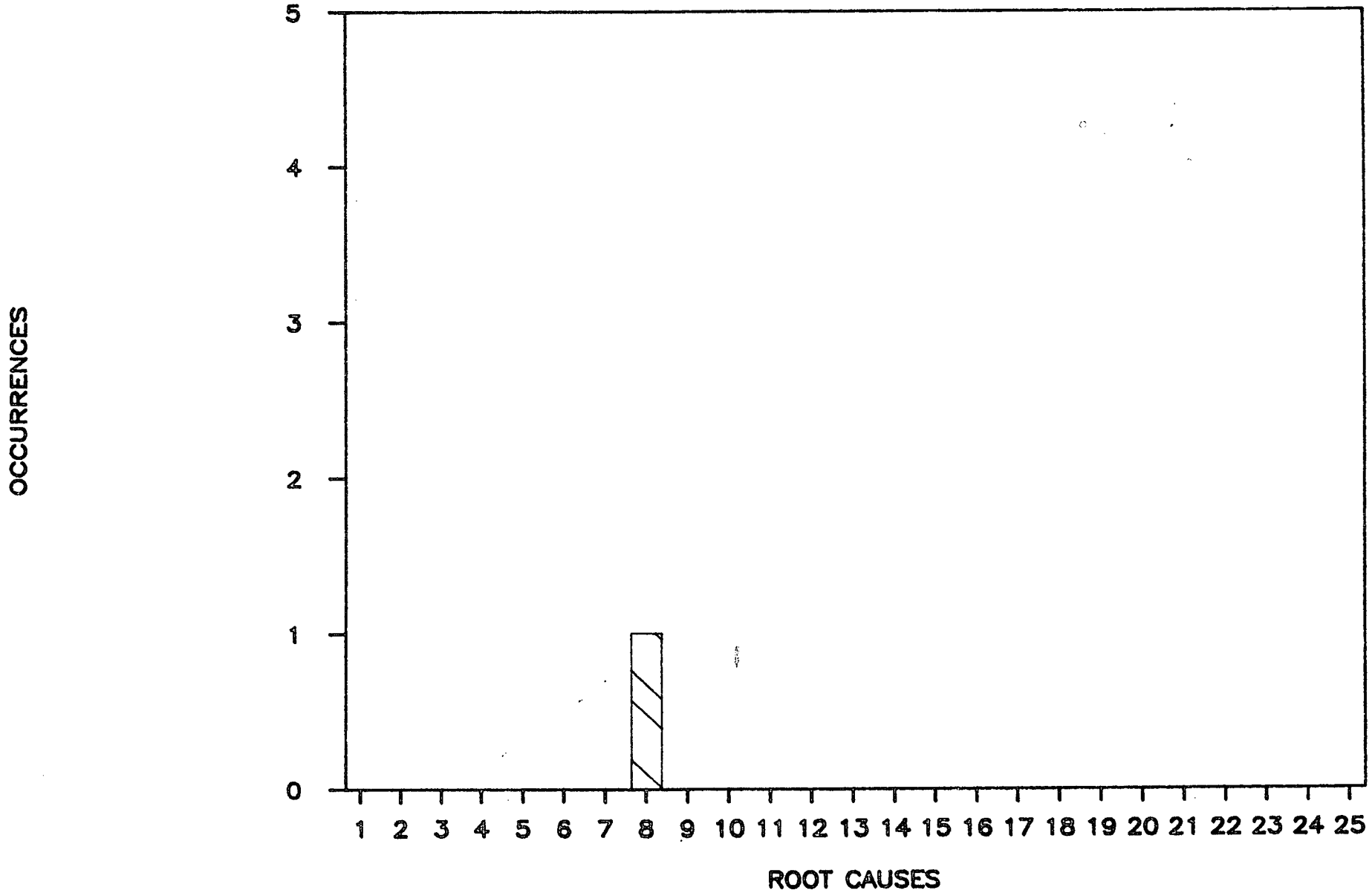


OCCURRENCES VS SYMPTOMS



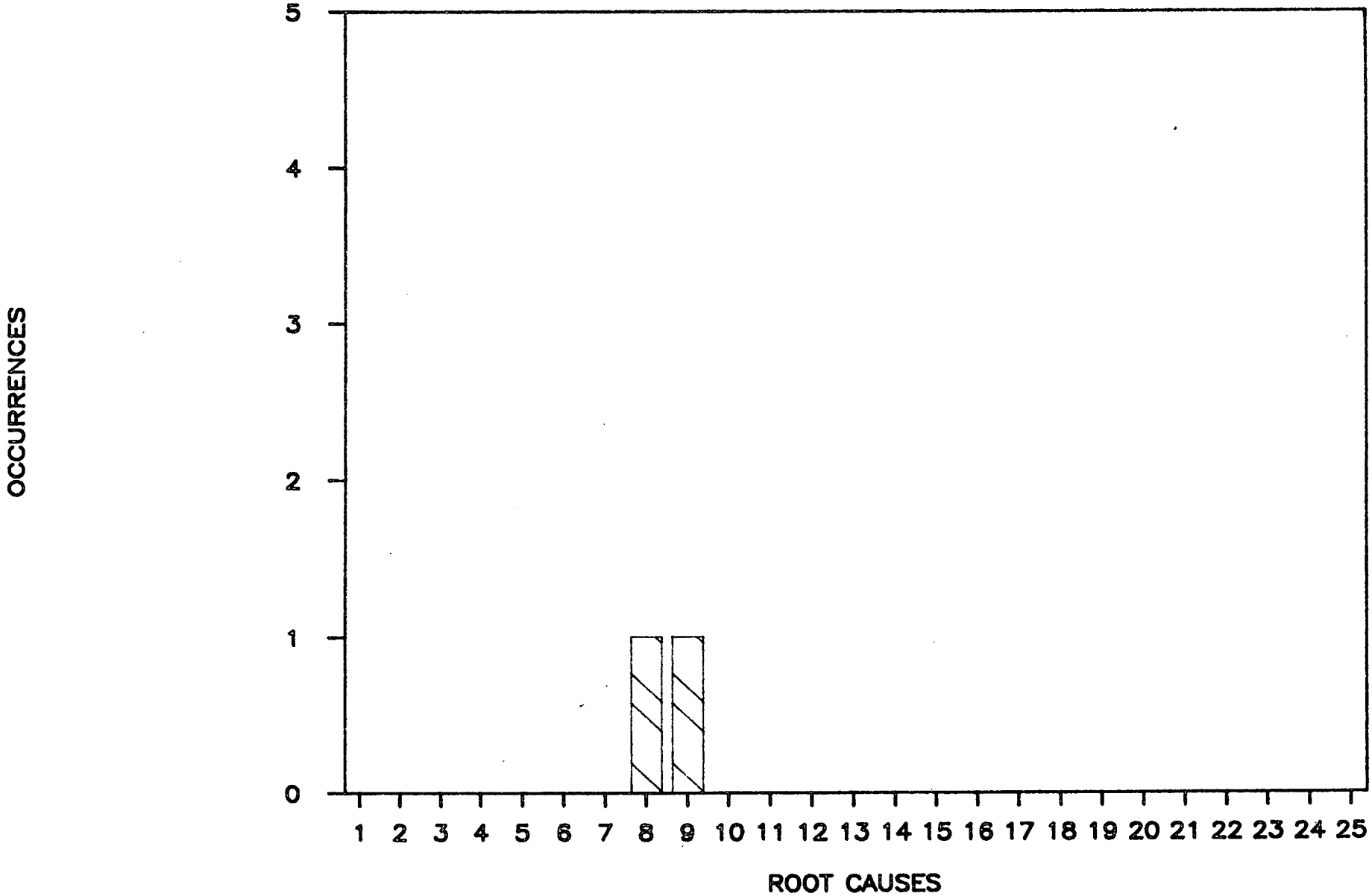
OCCURRENCES VS ROOT CAUSES

WATTS BAR NUCLEAR PLANT



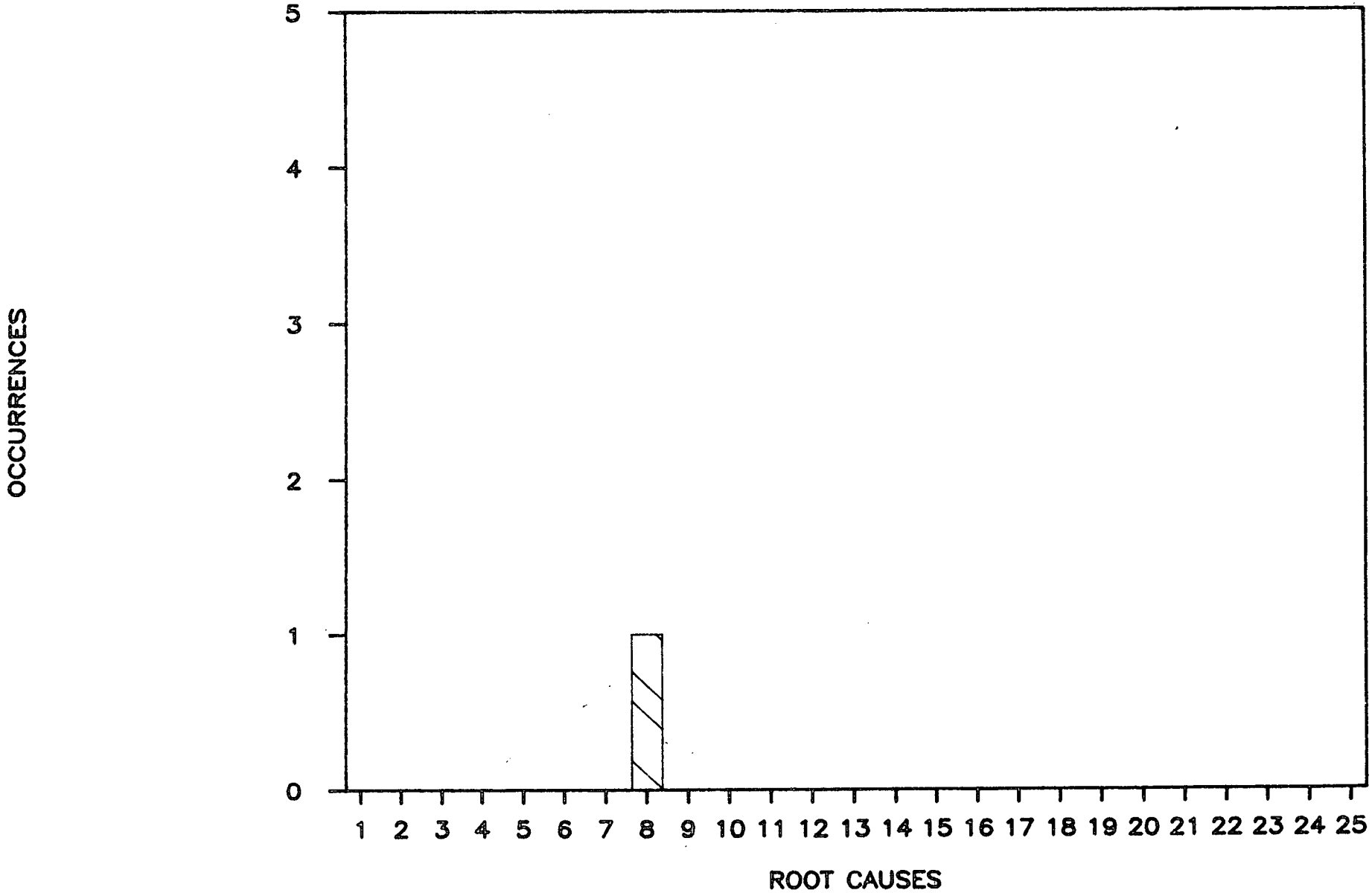
OCCURRENCES VS ROOT CAUSES

SEQUOYAH NUCLEAR PLANT

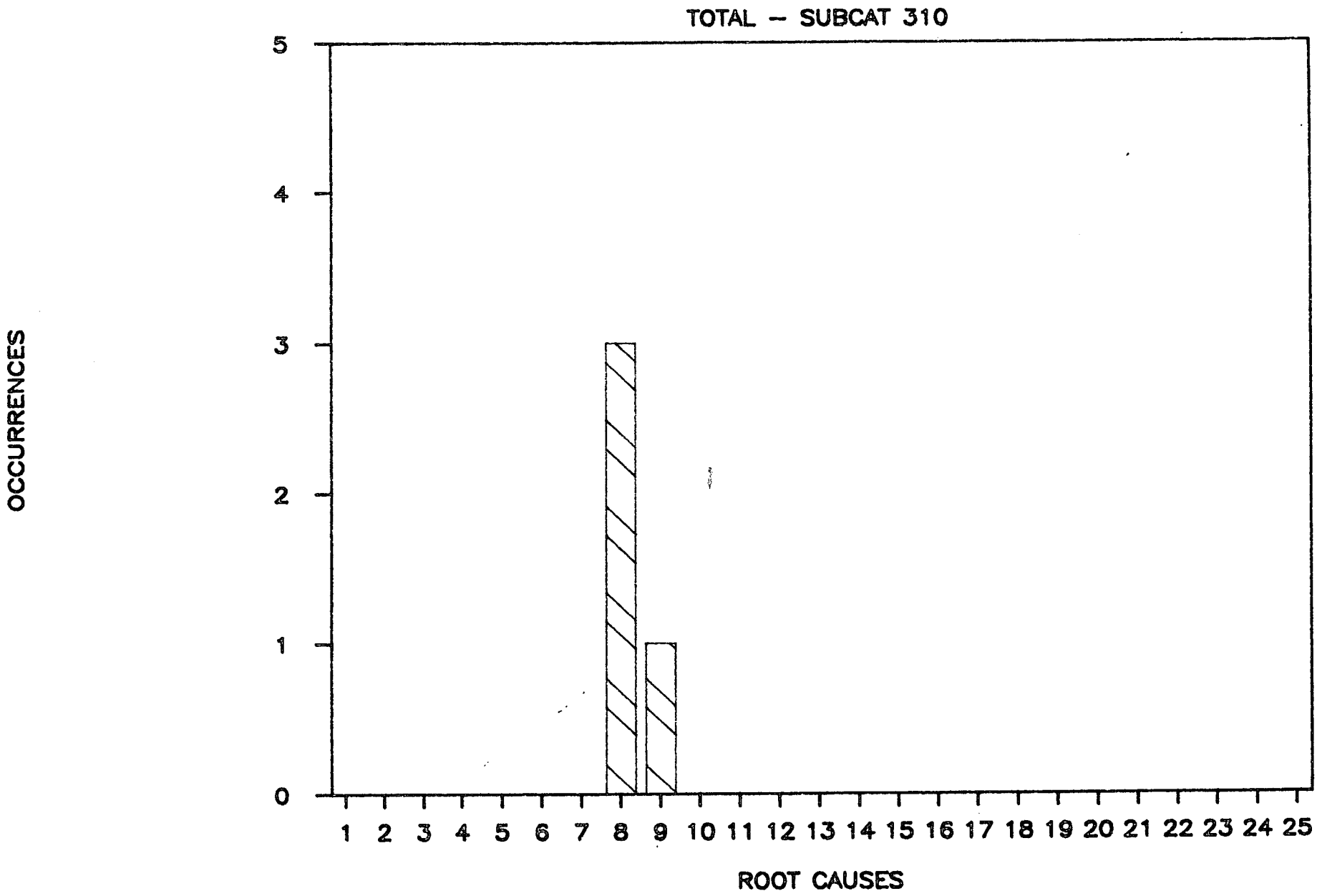


OCCURRENCES VS ROOT CAUSES

BROWNS FERRY NUCLEAR PLANT



OCCURRENCES VS ROOT CAUSES



ATTACHMENT H

CORRECTIVE ACTION TRACKING DOCUMENT (CATDs)

CATD Number	Corrective Action Plan Received/Approved
31001-SQN-01	Yes
31002-SQN-01	Yes
31003-WBN-01	Yes
31003-WBN-02	Yes
31003-SQN-01	Yes
31003-BFN-01	Yes
31003-BLN-01	Yes

ECSP Corrective Action Tracking Document (CATD)

INITIATION Applicable ECSP Report No: 310.01-SQN Revision 0

1. Immediate Corrective Action Required: ☐ Yes ☒ No
2. Stop Work Recommended: ☐ Yes ☒ No
3. CATD No. 310.01-SQN-01 4. INITIATION DATE 10-14-86
5. RESPONSIBLE ORGANIZATION: Operations
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR Work Plans 120-20, 120-52, 120-57, 120-58, 120-65 and 121-52 involving fuse identification and replacement are to be completed. Additionally, operating instructions are to be revised to describe precise fuse descriptions.

☐ ATTACHMENTS

7. PREPARED BY: NAME T. W. White DATE: 10-14-86
8. CONCURRENCE: CEG-H W.R. [illegible] DATE: 10-15-86
9. APPROVAL: ECTG PROGRAM MGR. [illegible] DATE: 4/7/87

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN: Complete work plans.

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: 8303 86 09 19 802 DATE: 9-24-86
12. CONCURRENCE: CEG-H: W.R. [illegible] DATE: 10-15-86
SRP: DATE:
DATE:
DATE:
DATE:
ECTG PROGRAM MGR: DATE:

VERIFICATION AND CLOSEOUT

13. Approved corrective actions have been verified as satisfactorily implemented.

SIGNATURE TITLE DATE

ECSP Corrective Action Tracking Document (CATD)

INITIATION

Applicable ECSP Report No: 310.02 SQN

1. Immediate Corrective Action Required: ☐ Yes ☒ No
2. Stop Work Recommended: ☐ Yes ☒ No
3. CATD No. 310.02 SQN 01 4. INITIATION DATE 10-24-86
5. RESPONSIBLE ORGANIZATION: SQN
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR Section Instruction Letters OSLT-4 has not been used for QA training since OSLT-1 was revised to incorporate the QA training requirements.

   Periodic reviews of Section Instruction Letters are apparently not being performed.

☐ ATTACHMENTS

7. PREPARED BY: NAME Don Smith DATE: 10-24-86
8. CONCURRENCE: CEG-H W. R. Lagg DATE: 10-27-86
9. APPROVAL: ECTG PROGRAM MGR. R. Wells DATE: 4/7/87

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN: OSLT-4 will be reviewed and either revised or deleted as necessary. Anticipate 6 to 12 months to complete.

    The procedures staff/group is reviewing TVA's programs and procedures. Sent a 45 to Mildred McGuire to review and comment on the ECTG recommendation. (S53-860922 803) She is to respond to the recommendation within 6 months. We anticipate 6 to 12 months to complete this item.

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: S03 861015 802 DATE: 10-20-86
12. CONCURRENCE: CEG-H: W. R. Lagg DATE: 10-27-86
    SRP: DATE:
    DATE:
    DATE:
    DATE:
    ECTG PROGRAM MGR: DATE:

VERIFICATION AND CLOSEOUT

13. Approved corrective actions have been verified as satisfactorily implemented.

SIGNATURE TITLE DATE

2234T

ECSP Corrective Action Tracking Document (CATD)

Applicable ECSP Report No.: 310.03-WBN

INITIATION

1. Immediate Corrective Action Required: ☐ Yes ☒ No
2. Stop Work Recommended: ☐ Yes ☒ No
3. CATD No. 31003-WBN-01
4. INITIATION DATE 01-14-87
5. RESPONSIBLE ORGANIZATION: Plant Management
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR The NSRS Report recommendation I-85-381-WBN-01 has not been fully implemented regarding training and retraining of craft/construction personnel on the plant clearance procedure.

☒ ATTACHMENTS

7. PREPARED BY: NAME D. E. Smith DATE: 01-14-87
8. CONCURRENCE: CEG-H [signature] DATE: 1-29-87
9. APPROVAL: ECTG PROGRAM MGR. [signature] DATE: 1-30-87

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

SEE ATTACHED CAP

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: [signature] DATE: ~~2/7/87~~ 2/11/87
12. CONCURRENCE: CEG-H: [signature] DATE: 2-20-87
    SRP: DATE:
    DATE:
    DATE:
    DATE:
    DATE:
    ECTG PROGRAM MGR: DATE:

VERIFICATION AND CLOSEOUT

13. Approved corrective actions have been verified as satisfactorily implemented.

SIGNATURE | TITLE | DATE

ECSP Corrective Action Tracking Document (CATD)

Applicable ECSP Report No.: 310.03-WBN

INITIATION

1. Immediate Corrective Action Required: ☐ Yes ☒ No
2. Stop Work Recommended: ☐ Yes ☒ No
3. CATD No. 31003-WBN-02
4. INITIATION DATE 01-14-87
5. RESPONSIBLE ORGANIZATION: Operations
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR Deficiencies identified on WB-CAR-85-20 are still open.

☒ ATTACHMENTS

7. PREPARED BY: NAME D. E. Smith DATE: 01-14-87
8. CONCURRENCE: CEG-H Thomas F. Hutcheson DATE: 1-29-87
9. APPROVAL: ECTG PROGRAM MGR. DW Steinmetz DATE: 1-30-87

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

SEE ATTACHED CAD

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: Robert S. Dell DATE: 2/2/87
12. CONCURRENCE: CEG-H: W. R. Lagrange DATE: 2-20-87
    SRP: DATE:
    DATE:
    DATE:
    DATE:
    DATE:
    ECTG PROGRAM MGR: DATE:

VERIFICATION AND CLOSEOUT

13. Approved corrective actions have been verified as satisfactorily implemented.

SIGNATURE | TITLE | DATE