TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

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CONCURRENCE (FINAL REPORT ONLY)

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Preface

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

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

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

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

To make the subcategory reports easier to understand, three items have been placed at the front of each report: a preface, a glossary of the terminology unique to ECSP reports, and a list of acronyms (terms formed from the first letters of a series of words).

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

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

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

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

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

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

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

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

1.0 CHARACTERIZATION OF ISSUES

This subcategory report consists of seven issues, each addressing a particular aspect of walking or working surfaces. Concerns and safety suggestions relating to walking and working surfaces are those that saw potential for employees to be injured by tripping or slipping on the same level or falling from elevated work locations such as ladders, scaffolds, or floor openings. There are no nuclear safety-related concerns in this subcategory.

Most of these issues focus on dynamic conditions in a plant which evolve and change as the plant shifts from a construction site to an operating facility. Properly developed and implemented standards, procedures, and requirements lessen the problems associated with the transition. Management and employees both have responsibilities for industrial safety. However, management is charged with the task of its implementation. The issues in this report address perceptions that management has not fulfilled its responsibility.

1.1 Guardrails

This issue consists of eight (8) employee concerns and two safety suggestions that guardrails are not being provided at elevated work surfaces. The concerns specifically address a lack of guardrails on the Intake Pumping Station (IPS), roof decks of shielding enclosure structures, and two identified openings. Guardrails are perceived as being required on all elevated surfaces upon which personnel are required to work.

1.2 Ladders

The issue regarding ladders consists of 15 concerns. The perception is that ladders are not being properly provided, installed, inspected, or maintained. The issue involves both portable and fixed ladders and their associated equipment such as protective cages and ladder climbing safety rails.

1.3 Scaffolds

The issues regarding scaffolds consists of 12 concerns. The perception is that scaffolds are not installed, inspected, or maintained according to established requirements.

1.4 Slipping Hazards

The issue relative to slipping hazards was expressed through two concerns and three safety suggestions. The perception is that walking and working surfaces are not properly installed, protected, or maintained.

1.5 Tripping Hazards

Ten (10) concerns were expressed regarding tripping conditions in the plant. The perception is that floors and aisles are not maintained free of tripping hazards.

1.6 Catwalks and Grate Decks

Two concerns were expressed regarding the perception that catwalks and grating decks are not being provided in sufficient numbers at Watts Bar Nuclear Plant (WBN). Additionally, five safety suggestions were included in this group for a total of seven expressions that there are insufficient numbers of catwalks and grating decks at WBN.

1.7 Floor Openings

The perception that floor openings are inadequately guarded at WBN was expressed through a single concern.

2.0 SUMMARY

2.1 Summary of the Issue

This report addresses perceptions by employees that walking and working surfaces at WBN are not adequately provided, inspected, installed, protected, or maintained.

2.2 Summary of the Evaluation Process

The evaluation process employed in the compiling of this report involved research and review of the applicable plant and industry standards, review of pertinent memorandums and documents, review of previous investigations and reports on the subject employee concerns, the conduct of interviews, and the performance of inspections.

2.3 Summary of the Findings

2.3.1 Guardrails

This issue was not substantiated. The evaluation determined that guardrails were provided where required by maintenance and operational activities which are conducted on a regular basis. Where activities are performed on a nonroutine, irregular basis, temporary guardrails or body belts and lanyards are required. Findings revealed compliance with industry standards in these areas.

Additional findings revealed maintenance and operational activities to be evolving as a result of plant experience. An effective method for determining future needs has been devised and employed (plant access survey). However, no written procedures exists to ensure the continuance of this process.

2.3.2 Ladders

Findings revealed overall compliance with ladder standards. However, the WBN Ladder Program is not functioning fully as intended. Deficiencies were found in the provision and control of portable ladders in the plant, and in the presence of permanent interferences with fixed ladders.

There are many areas of the plant which require employee access. In order to discourage employees from climbing on piping and equipment, portable ladders are provided at designated locations throughout the plant. Findings revealed that, although effort has been expended in this area, portable ladders are not sufficiently provided, controlled, or used.

Fixed ladders fail to meet one specific industry standard because permanent interferences were frequently found which impeded full contact of one's foot with one or more ladder rungs. Other aspects of fixed ladders were found to be in compliance with the requirements.

2.3.3 Scaffolds

The issues on scaffolds were not substantiated. Scaffolds were determined to be of sound construction and in compliance with the standards.

2.3.4 Slipping Hazards

The issue of walking and working surfaces not being properly installed, protected, or maintained was not substantiated. No specific industry standard was found to provide criteria by which the plant floor surface could be compared for determination of compliance. Floor areas subject to water spills are provided with nonskid tape as well as other provisions. Standards which do exist, relative to this issue, are those for housekeeping. These standards require floors to be kept as dry as possible and clear of accumulations of litter, dirt, water, oil, and obstructions. Findings revealed compliance in this area.

2.3.5 Tripping Hazards

This issue deals with housekeeping effectiveness. Although inspections revealed some tripping hazards, the overall conclusion is that housekeeping, including care of hoses and cords is good and that current efforts are effective in the control or elimination of such hazards.

2.3.6 Catwalks and Grate Decks

The issue that there are too few catwalks and grate decks is not substantiated. No single standard was found which would mandate such platforms be permanently installed. Inferences from several standards were made in order to provide a guideline for permanent platforms. Based upon this guideline, the findings revealed platforms to be provided where required. Where accessing problems exist, WBN is employing a method, the plant access survey (PAS), which effectively determines abatement actions (those which eliminate or neutralize a hazard). However, findings revealed no written procedure to ensure a continued PAS to identify, track, and up-date future platform needs.

2.3.7 Floor Openings

The issue that floor openings are inadequately guarded is not substantiated. The concern which initiated the creation of this issue was a valid concern in that openings (two ventilation duct openings) were unguarded and adjacent to a walking surface. However, no other conditions of this nature were observed during the evaluation. Therefore, the isolated incident was not determined to be a valid issue.

2.4 Summary of Collective Significance

2.4.1 Management Effectiveness

Findings indicate that management has not been entirely effective relative to the issues of ladders, guardrails, and platforms. WBN relies on a method called the plant access survey in order to keep abreast of accessing needs as work activities evolve. Yet, no formal, written procedure exists which will ensure perpetuation of this process.

Findings on the issue of ladders, revealed some management ineffectiveness in the allocation of portable ladders and in the implementation of procedures to control their use.

2.4.2 Employee Effectiveness

Findings revealed employee compliance with established requirements to be less than adequate in the area regarding portable ladders. Permanent ladder storage locations are designated throughout the plant. However, employee failure to abide by requirements to return portable ladders to these storage locations is widespread.

2.4.3 Technical Adequacy

Findings on fixed ladder installations show that compliance with established requirements was not fully attained. Fixed ladders meeting with rung interferences are not uncommon occurrences at WBN.

2.5 Summary of Causes for the Findings

The cause determined for the lack of a written procedure on the WBN plant access survey is that WBN perceives present efforts to be sufficient. The survey, first conducted in 1981-1982 was not again performed until 1985. The survey did not become heavily relied upon until the 1985 survey was conducted. Before this, a Hazard Control Instruction (HCI) was employed which placed responsibility for identifying access related problems on the employee. This HCI was deleted from the manual in 1986, in the belief that sufficient other avenues existed through which such problems can be channeled.

Causes for problems associated with portable ladder allocation and control in the plant originate with the number of organizations (four at least) vying for available ladders. The high number of ladders in use at any given time creates a tendency for employees to keep ladders for future use rather than returning them and later risk having to expend effort to bring one in from the outside or spend time searching the plant for one not in use. This practice indicates that both insufficient quantities of ladders are provided and that employees have not been actively supervised in this area to ensure that ladders are returned to their designated locations.

Causes for interferences with fixed ladders are perceived to be due in part to field routing of piping and conduit. This activity is permissible for nonsafety-related piping and conduit, two inches or less in diameter. Craft and Quality Control personnel seem unaware of the applicable standard prohibiting ladder rung interferences. Other interferences (safety-related piping and piping greater than two inches in diameter) are the result of deficiencies in the design/review process.

2.6 Summary of Corrective Actions and Results Achieved

Corrective actions being taken to alleviate problems identified in this report include efforts to provide and control portable ladders used in the plant. The Hazard Control Instruction (HCI) will be revised and communicated to employees. Enforcement will be a priority item addressed by the safety audit program. Supply and demand of portable ladders will be evaluated and inventories adjusted. Also, the Central Safety Committee will be approached about establishing rules, procedures, and instructions common to both WBN and DNC where possible.

WBN has committed to a 2-year cycle of review for future plant access survey needs, and the access survey will be included as an agenda item for the Central Safety Committee. Tracking of identified items will be accomplished by the Industrial Safety Section.

Actions to correct fixed ladder deficiencies are being taken by Watts Bar Nuclear, Nuclear Construction, and the Division of Nuclear Engineering (DNE). All fixed ladders will be surveyed, evaluated, and corrective action taken to alleviate ladder interferences. Additionally, the DNE organization will provide instruction through a training class that outlines the various facility design criteria.

3.0 EVALUATION PROCESS

The methods used in the evaluation of this subcategory included interviews, inspections, standards reviews, and review of pertinent memorandum and other documents. Each of these methods are discussed below.

3.1 Interviews

During the course of this evaluation and earlier investigations, interviews were conducted with 48 ONP (Office of Nuclear Power) WBN Power and DNC (Division of Nuclear Construction) employees. The interviews consisted of 13 random and 35 informal discussions with employees concerning the seven issues of walking and working surfaces. The following is a breakdown of the interviews by issue.

3.1.1 Interviews on Guardrail Issues

Interviews were conducted with ten employees at WBN. Interviews with two Mechanical Maintenance (MM) General Foremen and a MM Planner were on IPS (Intake Pumping Station) missile shield removal and installation activities. Interviews were also conducted with an industrial safety specialist and two Unit Operators, two MM Foremen, a General Foreman, and an Electrical Maintenance (EM) Dual Rated Foreman. These interviews were conducted to determine the frequency and scope of operations and maintenance activities on guardrails.

3.1.2 Interviews on Ladder Issues

Interviews were conducted with ten employees at WBN in order to gain necessary knowledge of details on individual concerns and the Ladder Maintenance Program at WBN. Interviews were conducted with four craftsmen or foremen, an expeditor, and two craft assistant superintendents, all DNC employees. Additional interviews were held with a MM foreman and an engineer, and an industrial safety specialist.

3.1.3 Interviews on Scaffold Issues

A Construction Management Assistant (CMA) was interviewed for information on jurisdictional rules for scaffold building, and the DNC safety engineer was interviewed.

3.1.4 Interviews on Slipping Hazard Issues

During the course of the evaluation (including previous evaluation efforts) 15 interviews were conducted. Two informal interviews were conducted with personnel knowledgeable in the type of surface coatings applied to the floors. The remaining 13 interviews were conducted randomly with plant personnel asking their opinion of the safety of the finished concrete floors.

3.1.5 Interviews on Catwalk and Grating Deck Issues

Two interviews were conducted with members of the WBN Industrial Safety Staff to obtain information regarding the functions and status of the Plant Access Survey. Two interviews were conducted with MM personnel (MM supervisor and MM engineer) to obtain details and information regarding Design Change Request (DCR) and Field Change Request (FCR) for projects related to concerns of this issue. Additionally, four MM foremen and general foreman, a EM Dual Rated foreman, and two Unit Operators were interviewed regarding provision of platforms where frequency (as defined above) dictates.

3.1.6 Interviews on Floor Opening Issues

The DNC sheet metal superintendent was interviewed informally concerning abatement of the condition identified in the concern associated with this issue.

3.2 Inspections

The evaluation of these subcategory issues involved the conduction of fifty inspections. The inspections are discussed below by issue.

3.2.1 Inspections for the Guardrail Issue

Inspections were conducted on four occasions which included observations of areas specifically identified in the listed concerns. Additionally two comprehensive walk-through inspections were conducted of the plant in order to observe areas and locations which may potentially require installation of guardrails to meet standards as a result of exposure, activity, and frequency of work.

3.2.2 Inspections for the Ladder Issue

Inspections and observations of fixed and temporary ladders were conducted on ten separate occasions. These activities were both specific and general in nature involving general walk through observations and inspections of individual items of concern identified on K-Forms. These inspections and observations were conducted in order to determine the overall level of compliance with the standards.

3.2.3 Inspections on Scaffold Issues

Fifteen inspections were made during the periods of October 1985, March 1986, and April 1986 regarding various aspects of scaffolds.

3.2.4 Inspections on Slipping Hazard Issue

Inspections were made on four occasions. The inspections involved general walk-through and inspection of specific areas. Floor areas mentioned in concerns as having a slick surface were observed.

3.2.5 Inspections on Tripping Hazard Issue

Inspections were conducted of site areas for housekeeping acceptability during the months of June, July, and December 1985 and April, May, and June 1986.

3.2.6 Inspections on Catwalk and Grating Deck Issue

Seven inspections and observations were made of areas in the plant (and outside) regarding concerns specifically identified and checking provision for catwalks, grate decks, and platforms in general.

3.2.7 Inspections on Floor Opening Issue

Four inspections were conducted of the specific area mentioned in the concern and of the plant in general (Turbine, Auxiliary, and Reactor Buildings) to determine if the problem of unguarded floor openings occurred as an isolated case or throughout the plant.

3.3 Standards Review

Standards, procedures, and instructions which were determined to have relevance to the issues about walking and working surfaces were reviewed and are summarized below by issue.

3.3.1 Standards Applicable to the Guardrail Issue

3.3.1.1 29 Code of Federal Regulations (CFR) 1910.23, "Guarding Floors and Wall Openings and Holes," (c), "Protection of Open-sided Floors, Platforms, and Runways."

This standard requires every open-sided floor or platform 4 feet or more above adjacent floor or ground level to be guarded by a standard railing on all open sides.

3.3.1.2 29 CFR 1910.23 (e)(1), "Railing, Toeboards, and Cover Specifications."

This standard requires that standard railing consist of top and intermediate rail, posts, and have a vertical height of 42 inches.

3.3.1.3 29 CFR 1910.132 (a) Personal Protective Equipment, General Requirements.

This standard requires personal protective equipment to be provided and maintained.

3.3.1.4 29 CFR, Interpretation, Occupational Safety and Health Administration (OSHA) Instruction, STD 1-1.13, April 16, 1984. Subject: 1910.23 (c)(1), (3) and 1910.132 (a).

This standard states that, for employees exposed to falls from an elevated surface on other than a predictable and regular basis, personal protective equipment or other effective fall protection shall be provided.

3.3.1.5 The Division of Nuclear Construction (DNC) Manual of Safe Practices and Information, Pages 18 and 19, Guards, Guardrails, and Barricades.

This requirement states that guardrails or barricades are to be erected where personnel may be exposed to falls greater than four feet.

3.3.2 Standards Applicable to the Ladder Issue

3.3.2.1 29 Code of Federal Regulations (CFR), 1910.27, "Fixed ladders," - This standard addresses ladder clearances (distance to the nearest permanent object), cage requirements, pitch requirements, and protection from deterioration.

3.3.2.2 ONP Supplemental Requirement, N82S1, "Portable Ladders" - This requirement states that portable ladders shall be inspected quarterly and that designated storage location be provided. Employees are instructed to return portable ladders to designated storage locations.

3.3.2.3 TVA WBN Hazard Control Instruction (HCI)-M2, "Ladders," - This instruction addresses basic ladder safety requirements, and specifically, the requirement for ladders to be tied off or held by an individual, or otherwise made secure.

Also addressed in this instruction is the requirement for all portable ladders to be returned to their proper storage location after completion of a task. The responsible supervisor is to ensure that this is accomplished.

3.3.2.4 WBN HCI-G2 Item 12, "Employee - Supervisor Safety Responsibilities" - This instruction states that when equipment or other work must be performed more than six feet above the floor or work surface, and no adequate scaffolding or work platform is present, an approved ladder, portable scaffold, or other suitable device shall be used to reach the work.

3.3.2.5 DNC Manual of Safe Practices and Information, "Ladders," pages 12 and 13, - This requirement states that DNC employees shall secure ladders before their use.

3.3.2.6 Memorandum from W. T. Cottle, Site Director, WBN, to All Employees, WBN, December 20, 1985, "Portable Ladders" - This memorandum requests the cooperation of employees to control the use of portable ladders by returning them to proper storage locations.

3.3.2.7 WBN Standard Practice WB-9.24., "Ladder Climbing Safety Devices" - This standard requires the safety rail to extend a minimum of 48 inches above the top landing.

3.3.2.8 Norton Company, Safety Products Division, SAF-T-CLIMB Fall Prevention System, "Installation Instructions" - This reference identifies the manufacturer's recommendations for the distance the safety rail should extend above the landing (four feet, six inches).

3.3.2.9 WBN Mechanical Maintenance Section Letter, (MSL) 8, Folder ID 270-27, "Portable Ladder Inspection" - This instruction provides the inspector of portable ladders with a list of ladders, with a list of items to be inspected for physical deterioration, and with the frequency of inspection. The instruction also provides for replacement of portable ladders missing from designated storage locations. This is accomplished by the initiation of a maintenance request (MR).

3.3.2.10 WBN Mechanical Maintenance Section Letter, (MSL)8, Folder ID 270-28, "Permanent Ladder Inspection," - This instruction provides the inspector of permanent ladders with a list of ladders, with a list items to be inspected for physical deterioration, and the frequency of inspection.

3.3.3 Standards Applicable to the Scaffold Issue

3.3.3.1 29 CFR 1910.28, "Safety Requirements for Scaffolding." This is an industry standard which provides the general requirements for scaffold erection.

3.3.3.2 29 CFR 1926.451, "Scaffolding"

This is the construction standard for scaffold erection.

3.3.3.3 WBN HCI-M9, Scaffolds, Aerial Lifts, and Elevated Working Platforms.

This instruction provides safety precautions and requirements while working on this equipment.

3.3.3.4 DNC Manual of Safe Practices and Information. Pages 13, 14, and 15.

This section of the manual provides specific information and requirements to DNC employees on patent scaffolds, bracing, planking, guardrails, and job-constructed scaffolds.

3.3.4 Standards Applicable to the Slipping Hazard Issues

Industry standards were researched to determine those applicable to this issue. No standard was available which directly addressed minimum criteria for floor surface coating from an industrial safety standpoint. The standards cited below deal with maintenance of floors.

3.3.4.1 29 Code of Federal Regulations (CFR)1910.22, (a)(2), "Housekeeping."

This standard applies to all permanent places of employment and states that the floor of every work room shall be maintained in a clean and, so far as possible, dry condition.

3.3.4.2 WBN Administrative Instruction (AI) 1.8, Revision 7, Plant Housekeeping, Attachment 1, "Housekeeping Checklist," Items 1 and 5.

These items shall be considered in performance of Housekeeping checks. Item 1 states that floors are cleared of accumulation of litter, dirt, water, oil, etc. (Leaks of water, oil, or other substances shall be reported to the appropriate plant maintenance section.)

Item 5 states aisles are free of obstructions so that movement of personnel and equipment is not hindered.

3.3.5 Standards Applicable to the Tripping Hazard Issue

3.3.5.1 29 CFR 1910.22 (a) (b) "General Requirements, Housekeeping, Aisles and Passageways."

This standard requires floors including aisles and passageways to be kept clear and maintained free of obstructions that could create a hazard.

3.3.5.2 29 CFR 1926.25, "Housekeeping"

This standard prescribes Housekeeping requirements during construction. It calls for control of construction materials, waste, and debris and requires clear aisles and passageways.

3.3.5.3 WBN Administrative Instruction (AI)-1.8

This instruction provides specific details concerning Housekeeping inspection performance. A checklist is included which addresses discrepancies to be identified. Some of the items stress observance of potential trip hazards.

3.3.6 Standards Applicable to the Catwalk and Grating Deck Issues

No directly applicable standards were found to exist which specifically address the issue of when catwalks or grating decks must be installed. The following standards were deemed by the evaluator to be appropriate guidelines for this subject.

3.3.6.1 29 Code of Federal Regulations (CFR) 1910.24 (a), (b) - "Fixed Industrial Stairs."

This standard is cited for its requirements on platforms (as defined in 29 CFR OSHA Instruction STD 1-1.13, relating to 1910.23 [C]), particularly for the requirement which states when stairs are to be provided. It is prudent to infer that the requirement for determining when to provide a stairway to a platform should also apply to when the platform (grating/catwalk) itself should be provided in lieu of a scaffold, ladder, or other means of access.

The rationale is that a platform must be required and available before a stairway is needed. Therefore, in the following summary of this standard, the evaluator believes it prudent for this purpose to read the standard for fixed stairs and apply it to platform usage.

Fixed stairs shall be provided for access where operations necessitate regular travel and for access to operating platforms at any equipment which requires attention routinely during operations. Fixed stairs shall also be provided where access to elevations is daily or at each shift for such purposes as gauging, inspection, regular maintenance, etc.

3.3.6.2 Occupational Safety and Health Administration (OHSA) Instruction Standard (STD) 1-1.13

This standard's interpretation is cited for the reasons cited in 3.3.6 above. This application is prudent in defining "platform" and "predictable, regular basis."

Platforms are interpreted to be any elevated surface designed or primarily used as a walking or working surface, and any other elevated surfaces upon which employees are required or allowed to walk or work while performing assigned tasks on a predictable and regular basis.

Predictable and regular basis means employee functions such as, but not limited to, inspections, service, repair and maintenance which are performed:

- at least once every two weeks, or
- for a total of 4 man-hours or more during any sequential 4 week period (e.g., 2 employees once every 4 weeks for 2 hours = 4 man-hours per 4-week period).

3.3.7 Standards Applicable to Floor Opening Issues

The following standards were found to be relevant to floor openings.

3.3.7.1 29 Code of Federal Regulations (CFR), Occupational Safety and Health Administration (OSHA) Construction Standards 1926.500(a), (b)(1) and (b)(8), "Guardrails, Handrails, and Covers" - This standard ([a] and [b][1]) applies to temporary conditions where there is danger of employees or materials falling through floor, roof, or wall openings, or from stairways or runways. The standard states that floor openings shall be guarded by a standard guardrail and toe boards or cover on all exposed sides. Further, (b)(8) states that floor holes, into which persons can accidentally walk, shall be guarded or covered.

3.3.7.2 29 CFR OSHA General Industry Standards 1910.23 (a)(7), and (8), "Guarding Floor and Wall Openings and Holes" - This standard requires that temporary floor openings and holes into which persons can accidentally walk have standard handrails or be constantly attended by someone.

3.3.7.3 TVA Manual of Safe Practices and Information (handbook provided for DNC), Guards, Guardrails, and Barricades, states that guardrails or barricades shall be erected around floor openings where personnel may be exposed to falls greater than four feet. The requirements are based upon the provisions of 29 CFR 1926.500(b)(1).

3.4 Pertinent Memorandums and Documents

These items were determined to have bearing on the issues of this subcategory report. The documents listed here by issue include references to surveys, inspection reports, memorandums, and previous responses to individual concerns. Issues not listed below had no pertinent documents which were deemed applicable.

3.4.1 Documents Relative to the Guardrail Issue

A review of the 1981-82 and 1985 WBN plant access surveys was conducted as they relate to the lack of or need for guardrail provisions at WBN.

3.4.2 Documents Relative to the Slipping Hazard Issue

3.4.2.1 Reviewed original responses to slipping hazard concerns.

3.4.2.2 Reviewed data gathered from health and safety committee inspections and quarterly reports regarding instances where slippery work surfaces were noted during the period February 1984 to March 1986.

3.4.2.3 An injury summary for WBN was reviewed to determine the cause for chargeable slip or trip injuries for FY 1984 and 1985.

3.4.3 Documents Relative to the Catwalks and Grating Deck Issue

3.4.3.1 Reviewed the WBN plant access surveys conducted in 1981-82 and 1985.

3.4.3.2 Reviewed pertinent memorandums and reports regarding the WBN "Access Survey" and its status:

- Memorandum from J. J. Loud, Industrial Safety Section and G. T. Denton, Special Projects to E. R. Ennis, Plant Manager, August 5, 1985, "Watts Bar Nuclear Plant - Plant Access"
- Memorandum from B. S. Willis, Acting Plant Manager to Those listed, dated August 16, 1985, "Watts Bar Nuclear Plant - Plant Access"
- Memorandum from B. S. Willis, Acting Plant Manager, to Those listed, dated November 26, 1985 "Watts Bar Nuclear Plant - Safe Plant Access"
- Memorandum from J. J. Loud to B. S. Willis, Acting Plant Manager, dated September 27, 1985, "Watts Bar Nuclear Plant - Access to Plant Equipment"
- Memorandum from J. J. Loud to Redford Norman, Operations and B. S. Willis, Plant Manager, dated January 17, 1986, "Watts Bar Nuclear Plant - Plant Access Survey"
- Memorandum from J. J. Loud to Those listed, dated January 21, 1986, "Watts Bar Nuclear Plant - Access Survey'

3.4.4 Documents Relative to the Floor Opening Issue

Inspection data from ONP WBN and DNC Health and Safety Committees and ONP WBN Quarterly Inspection Team was reviewed for floor opening deficiencies for the period February 1984 to March 1986.

4.0 FINDINGS

The issues addressed by this subcategory may have implications at other ONP sites. The issue involving ladders, for example, together with its associated findings and conclusions, can apply at other locations. Therefore, these issues are being addressed through the development of ONP standards (which are generic documents for all ONP) and through the development of site procedures (which deal with one site's specific circumstances).

The findings and conclusions of this subcategory report are not in conflict with any findings and conclusions generated as a result of previous investigations of the employee concerns addressed by this report.

4.1 Guardrails

4.1.1 Discussion

4.1.1.1 Site Specific - Watts Bar Nuclear Plant

The basis for this issue was determined to be unsubstantiated. Guardrails have been and are being provided when required at WBN. Additional locations for guardrail provision are determined by inspections, surveys (WBN Plant Access Survey), and when identified by employees. Additional guardrails are provided when they meet the criteria justifying such additions.

OSHA Standard 29 CFR 1910.23 (c) requires that guardrails be provided on platforms four feet or more above adjacent floor or ground level. A platform is defined as "any elevated surface designed or used primarily as a walking or working surface and any other elevated surfaces upon which employees are required or allowed to walk or work while performing assigned tasks on a predictable and regular basis."

Predictable and regular basis means employee functions which are performed at least once every two weeks or for a total of four man-hours or more during any sequential four-week period (Standard 1-1.13). The interpretation further states that "in situations where employees are exposed to falls from an elevated surface on other than a predictable and regular basis, personal protective equipment as required by 29 CFR 1910.132 (a), or other effective fall protection shall be provided."

Findings derived from plant inspections revealed that guardrails are being provided where maintenance activities are required to be conducted on a regular basis, as defined by OSHA Interpretation Standard 1-1.13. Interviews with Operations and Maintenance personnel were conducted in order to determine the existence of any areas requiring frequent accessing which are not currently provided with guardrails.

All those interviewed stated that to their knowledge no such areas exist. Interviews (and inspections) further revealed that areas which require infrequent accessing are provided with temporary handrails or personnel are required to be secured by bodybelts and lanyards. As maintenance and operations activities evolve, additional areas may be identified as requiring guardrails, primarily from the increased frequency of such activities.

The concerns expressed in this issue are all examples of areas requiring infrequent accessing. Therefore, these concerns are nonsubstantiated. For example, the intake pumping station missile shields, being designed for infrequent removal, were not equipped with a catwalk and handrails. The hold-down bolts are accessible only from the top side by personnel leaning over the sides of the missile shields. Serious fall potential exists unless all personnel performing this work are secured, as required, by body belts and lanyards or lifelines. The point of attachment must be to the missile shield itself.

Because of more frequent need for missile shield removal in recent years and due to the degree of hazard involved in this operation, WBN employees and management agreed upon installation of a catwalk with guardrails for this location. A Design Change Request (DCR 579) has been initiated and work has begun to provide a catwalk around the perimeter and a walking surface on top of the missile shields.

A temporary work platform has been erected for personnel performing this work. The platform consists of pickboards, guardrails, and a cable (which is provided for lanyard attachment). This same temporary platform will provide safe access for employees performing missile shield installation or removal until the permanent platform is completed. However, the installation of this equipment is not evidence to substantiate the concerns of this issue. The frequency at which employees are required to access this area still does not meet the minimum criteria for "predictable and regular" maintenance activities as set forth in Standard 1-1.13.

Similar findings were made regarding areas described as roof decks of shielding enclosures. Shielding enclosures are elevated concrete structures housing various types of equipment. These structures serve to protect equipment and to reduce employee exposure to radiation. The typical shielding enclosure roof deck possesses practically no equipment which would necessitate routine or frequent accessing, such equipment includes piping, conduit, and shield blocks to filters. Access to the areas on an infrequent basis or during outage, maintenance, or construction activities would require temporary wooden handrails to be erected or body belts to be worn. Observations made during this evaluation provided verification that these requirements are being met.

As previously stated, additional areas may require guardrails as warranted by increased frequency of activity in a particular locale at some future time. WBN currently has a number of avenues available through which these areas may be identified and assessed. These avenues included the WBN plant access survey, Crew Safety Meetings, Safety Suggestions Program, and recently, the

Employee Involvement Program. A WBN Hazard Control Instruction (HCI-G13, Elimination of Access Problems to Areas and Equipment), in effect until June 1986, provided a means for employees to identify areas which they believed needed guardrails or provision of other installations regarding access. However, this particular HCI has been deleted due to its redundancy with other avenues available for identifying these areas.

Currently, the plant access survey is the primary means by which areas are identified for improved access. The plant access survey was conducted in 1981-82 and again in 1985. Additions and revisions to the survey are being made based upon additional information gained from maintenance experience and from the programs previously mentioned. The survey method is an effective means for determining future needs for handrails, provided that current tracking, follow-up, and update or revision processes are continued. However, there is no written procedure to ensure this progress.

4.1.2 Findings/Conclusions

4.1.2.1 Site Specific - WBN

Findings revealed that guardrails are provided at WBN according to industry standards. Industry standards provide for alternative means of fall protection where the frequency of work is less than that sited in the OSHA Interpretation of "Predictable and Regular." The Plant Access Survey is relied upon for identifying and tracking areas which have potential need for guardrails. There is no written procedure for this function.

4.2 Ladders

4.2.1 Discussion

4.2.1.1 Site Specific - Watts Bar Nuclear Plant

The discussion is presented for both portable and fixed ladders under the four subheadings which make up the issue: ladders not properly provided, installed, inspected, or maintained.

4.2.1.1.1 Ladders are perceived as not being properly provided.

Portable Ladders - Portable ladders are not readily available during times of increased demand. This finding partially substantiates this aspect of the issue. Because HCI-G2 requires the use of an approved ladder for work more than six feet above the work surface, approved portable ladders must be readily available (provided in sufficient quantities) for work to progress and to deter employees from accessing equipment by climbing existing structures.

Portable ladders were determined to be in short supply at times within the power block because of fluctuations in demand and lack of control of ladder usage. One of the prime contributing factors is that ladders in this area are being shared by several organizations within ONP. Additionally, interviews with craft and supervision personnel revealed that employees are reluctant to obtain portable ladders from outside the power block when supply is short because of difficulty in bringing them through the power block portal. Also, the problem of insufficient supply of portable ladders in the plant is compounded by the failure of employees to return ladders to their designated storage locations.

A portable ladder preventive maintenance (PM) instruction and schedule is in existence. However, it is ineffective as revealed through inspections and interviews, with few ladders being found in their designated storage locations. The PM provides for the replacement of ladders which are missing by the initiation of a Maintenance Request Form (MR). Inspection of the PM folder revealed that no MRs had been issued for ladder replacement.

Efforts have been made to alleviate this problem. The portable ladder PM was recently (January 3, 1985) revised in order to provide additional ladders. However, evaluation findings indicate that portable ladders are still in short supply in the plant.

Attempts have been made to control portable ladders by locking them at their designated locations and providing keys to authorized employees (foremen, supervisors, etc.,). Also, a memorandum was issued from the Site Director on December 20, 1985, requesting everyone's assistance in returning ladders to their designated storage locations. However, these efforts have had only limited success in abating this concern.

Fixed Ladders - Fixed ladders are provided as necessary where accessing needs dictate. Areas which are perceived by employees as requiring fixed ladder access are identified through the various WBN programs such as employee involvement, safety meetings, etc. Items of this nature are routed through to the plant access survey committee for evaluation, updating, and tracking. The committee also conducts formal surveys, the last of which was conducted in 1985 and updated in 1986.

On the concern recommending a fixed ladder from the crane wall to the pressurizer enclosure roof deck, an evaluation revealed that a ladder in this location would interfere with operation of the polar crane. Also, other means of access to this area are provided during maintenance or outage work which preclude the need for this installation.

4.2.1.1.2 Ladders are perceived as not being properly installed.

Portable Ladders - Findings regarding this aspect of ladders deal with the placement and securing (tying off) of portable ladders. Findings revealed that the basis for concern is not fully substantiated. This statement must be qualified in that, although not all portable ladders observed were tied off or otherwise secured, WBN HCI-M2 allows for ladders to be held by another individual. Employees are required to ensure that portable ladders are secured before use. Ladders which are placed as access to scaffolds are being tied off by carpenters as required. Employees using portable ladders are not as conscientious in the securing of portable ladders, with some injuries having occurred as a result. However, compliance with this requirement is an individual responsibility of each employee. Although compliance is not 100-percent, reasonable effort has been taken by WBN to inform employees about this safety precaution.

Fixed Ladders - This aspect of the issue is partially substantiated. This determination was made with findings concerning interferences with fixed ladders. Conduit and piping interferences were observed at numerous locations where fixed ladders are installed. These interferences obstruct proper foot placement on the ladder rungs and thus constitute a technical violation of 29 CFR 1910.27 which prohibits interferences within seven inches of the back of the rungs. No findings were made which substantiate any reason for concern on any other aspect of fixed ladder installation. These findings cover the installation of cages, ladder climbing safety rails, and provision of "ships ladders."

Cages are required for fixed ladders greater than 20 feet in height. Cages, where required, must start at a height of seven to eight feet above the floor or landing as required by Standard 29 CFR 1910.27. Ladders and cages inspected at WBN were found to be in compliance with this standard.

Ladder climbing safety rails for fixed ladders were inspected and found to be in compliance with the manufacturer's recommendations and Standard Practice WB-9-24. The prescribed height that the rail is required to extend above the platform is four feet, six inches. The additional rail extension above the platform is a safety feature designed to prevent inadvertent disengagement from the rail. This configuration allows personnel to remain secured to the rail by means of the safety belt and sleeve until safely on the landing. The belt snap may then be released, freeing the individual from the rail while leaving the sleeve in place on the rail. All fixed ladders observed possessing ladder climbing safety rails were installed following the 4 feet 6-inch guideline.

A recommendation for the replacement of straight ladders with "ships ladders" was not substantiated based upon 29 CFR 1910.24 and 1910.27 regarding pitch requirements. A "ships ladder" is a substandard industrial stair (greater than 50 degree incline) or a fixed ladder having substandard pitch (between 60 degrees and 75 degrees to the horizontal). Therefore, they are no longer being approved for TVA's plants. Existing "ships ladders" in the plant and shop areas were designed before 1980. This is when TVA adopted section 19 of the Occupational Safety and Health Act of 1970 and Executive Order 12196 of February 26, 1980, Occupational Safety

and Health Programs for Federal Employees. "Ships ladders" currently in existence are being evaluated on a case-by-case basis for replacement with fixed industrial stairs or vertical ladders where physically possible. Therefore, no justification can be found for replacing "monkey" or fixed-straight ladders with "ships ladders."

4.2.1.1.3 Ladders are perceived as not being properly inspected.

Portable Ladders - WBN MM currently performs a semiannual PM inspection of portable ladders which are assigned to designated storage locations in the plant. These inspections cannot be satisfactorily performed because of the failure of employees to return ladders to proper storage. Ladders must be in their storage locations in order to be inspected. PM records for the most recent portable ladder inspection (May, 1986) revealed only 12 of 225 ladders to be available for inspection in their designated storage locations.

DNC carpenters inspect portable ladders under their jurisdiction semiannually. Also, all employees are instructed to inspect portable ladders before use and to place defective equipment tags on ladders deemed to be defective. This instruction is provided through General Employee Training, Employee Safety Handbooks and Crew Safety Meetings. Interviews with the DNC carpenter superintendent indicate that employees are relocating portable ladders and failing to resecure them. As stated earlier, injuries have occurred from unsecured ladders which provides evidence that employees are not performing their own inspections of portable ladders before use.

Fixed Ladders - Ladder inspections are made in accordance with the requirements of the HCI-M2. WBN MM performs inspections of fixed ladders in the plant on the following schedule:

- inside ladders and other ladders protected from adverse weather conditions - 2 years
- outside ladders - 1 year
- ladders in corrosive environments - 6 months

4.2.1.1.4 Ladders are perceived as not being properly maintained.

Portable Ladders - Portable ladders are being maintained as required by industry standards. This was determined by evaluator inspections of portable ladders. However, the portable ladder PM inspection records do not indicate whether ladders are repaired (through issuance of an MR) because of the problem of ladder availability for inspection at designated storage locations. This was discussed in 4.2.1.1.3 above.

Fixed Ladders - Fixed ladders are being maintained as required by 29 CFR 1910.27 and as determined by inspections and review of PM records. There is no standard which requires nonskid tape to be applied to fixed ladder rungs. Therefore, this material is not included as a part of the PM program.

4.2.2 Findings/Conclusions

4.2.2.1 Site Specific - WBN

The overall ladder program is being managed according to industry standards with the exception of interferences with fixed ladder rungs in some locations. Portable ladders, although not found to be deficient, were observed to be inadequately available or controlled at times.

4.3 Scaffolds

4.3.1 Discussion

4.3.1.1 Site Specific - WBN

DNC has specific requirements for scaffolding that are based on OSHA requirements. Scaffolds that are fabricated from wood are built by the carpenter craft. Manufactured scaffolding erected by assembling parts can be done by the craft that intends to use the scaffold up to the height of 13 feet. Scaffolds constructed to greater heights must be erected by carpenters. Scaffolds more than five feet in height must be equipped with guardrails. If the structure or work interferes with the erection of guardrails, users of the scaffold must use safety belts. Before employees use a scaffold, it must be inspected by the supervisor, and an inspection tag must be attached.

Fifteen inspections have been made during the periods of October 1985, April 1986, and March 1986. Scaffolds inspected were of sound construction, and there was no indication that scaffolds constructed by crafts other than carpenters were of inferior quality. In some cases guardrails were not provided, but this was noted on the inspection tag.

Specific areas mentioned in the concerns were inspected. Some scaffolds in the Turbine Building had not been inspected for a period of weeks, but no work was in progress on the scaffolds. Construction's policy does not require scaffolds to be inspected on a continuing basis, but only immediately before working on it. Another area mentioned was scaffolds not firmly anchored down behind the steam generator in unit two. Only good quality scaffolds were found, but they were supported by wire rope. Being suspended in this manner does permit some motion, but not enough to affect the safety of the scaffold. A specific concern was expressed that a group could not obtain a scaffold, but random interviews with four people in the group were unable to verify the concern.

Inspections during October 1985 did reveal some scaffolds over ten feet in height that were not equipped with toe boards. This was reported to the safety engineer and carpentry supervision. A recheck was made during November 1985, and toe guards had been installed. This was verified during April 1986.

4.3.2 Findings/Conclusions

4.3.2.1 Site Specific - WBN

Scaffolds were observed to be of good quality during the evaluation process. The limited number of instances in which deficiencies were noted did not justify substantiation of the issue.

4.4 Slipping Hazards

4.4.1 Discussion

4.4.1.1 Site Specific - WBN

The findings of this evaluation did not substantiate the issue. The work surfaces at WBN were determined to be installed, protected, and maintained according to applicable standards. Although floor surfaces may become slicker under certain conditions because of the presence of substances such as water or oil, no evidence exists which indicates a failure to properly install, protect, or maintain the work surface (floor).

The evaluation revealed that the floor coating was installed according to QA requirements for areas which will be potentially exposed to radioactive substances. The floor surface must be capable of withstanding decontamination processes in order to prevent contamination of the concrete surface below. Contamination of an unprotected concrete floor surface could require chipping the surface away. The materials applied to floors in the Reactor and Auxiliary Buildings are an emulsion of epoxy and pigments (#295 Surfacer used to level up and fill in holes and #305 Carboline for the wearing surface). However, no standard, in which minimum requirements regarding the coefficient of friction for floor surfaces, was determined to be in existence.

Several interviews with employees (randomly selected) revealed the opinion that the painted surface was not hazardous except when wet. There are areas in the plant which may become wet during normal operating or maintenance activities. Many of these areas have been identified and efforts made to reduce the potential for personnel to slip and fall.

Observations throughout the plant revealed that nonskid tape applications have been made in many such places. Additionally, where permissible, abrasive paint walkways have been applied where standing water is a problem. An example is the Auxiliary Building roof. Personnel are occasionally required to service equipment located in this area. Walkways have been designated and abrasive paint applied providing safe access to all equipment during wet weather. Flexible rubber link mats have also been furnished for use in this area while servicing equipment. It is recognized that this area has a greater potential for slips to occur because of its exposure to the weather. However, this evaluation has determined that the hazard is being dealt with effectively. Other areas inside the plant which may be exposed to water have received attention by the application of nonskid tape. Inside floors are easier to maintain and are less likely to remain wet for extended periods of time as in the case with roof areas.

Inspections revealed floors to be well maintained. Few instances were observed in which water or oil were found on floors. One particular concern identified a slipping hazard on the RCP (Reactor Coolant Pump) platforms because of leaks from the pumps. This area was inspected and found to be free of oil seepage. Maintenance on the pumps had occurred and abatement of the hazard achieved. However, such conditions will present themselves from time to time when plant equipment experiences difficulty or failure before scheduled maintenance.

One observation made by the evaluator and included here is to the vast difference in types of foot wear worn by employees. Differences in the type of shoe sole must certainly have an effect on one's traction on a given surface.

Although recognized as a contributing factor in the source of and basis for the concerns of this issue, the traction of different types of shoes worn by employees was not surveyed.

A summary of eleven chargeable injuries for ONP WBN involving slips and trips during the period FY 1984 and 1985 was reviewed. None of the injuries were attributed to the slipperiness of the final surface coating of floors in unit one, Auxiliary and Reactor Buildings.

4.4.2 Findings/Conclusions

4.4.2.1 Site Specific - WBN

Findings revealed that floor surfaces were applied according to standards relative to coating requirements for nuclear plants. No standard was determined to provide minimum requirements for the coefficient of friction of floor surfaces. Reasonable effort was found to be invested in the control of potentially slick areas (where water may be introduced).

4.5 Tripping Hazards

4.5.1 Discussion

4.5.1.1 Site Specific - WBN

The site requires that aisles and work areas be kept free of tripping hazards, such as welding leads, hose, and extension cords. Employees using these articles are required to locate them so that a tripping hazard is not created. Supervisors are required to enforce this rule, and management conducts inspections to verify compliance.

Inspections of site areas to determine if tripping hazards exist have been conducted during June, July, and December 1985, and April, May, and June 1986. There have been occasions when a hose or cord was not properly located, but overall the site housekeeping is good. In an effort to make the elimination of tripping hazards more convenient, supervision has erected temporary hangers in the Auxiliary Building for hoses and cords.

Specific areas mentioned in the concern, such as the carpenter shop, were inspected and housekeeping was determined to meet the standards set forth in 29 CFR 1926.25, Housekeeping. Overhead hangers for electrical cords were provided and air headers were located along each wall to minimize the length of hose necessary.

Tripping hazards created by permanent plant features such as the A-56 door threshold and the pipe chase area do exist. The door mentioned is an air lock and this necessitates a raised threshold to provide an airtight seal. The threshold is marked with yellow and black striping to minimize tripping. The pipe chase area has numerous tripping hazards created by piping, valves, and pipe supports. These features cannot be removed, but the pipe chase is traveled only by employees performing work there.

4.5.2 Findings/Conclusions

4.5.2.1 Site Specific - WBN

Although tripping hazards do occur, effective controls are implemented relative to temporary hazards. Permanent features cannot be eliminated due to the nature of the plant. These features are clearly marked or are located in areas not normally traveled.

4.6 Catwalks and Grate Decks

4.6.1 Discussion

4.6.1.1 Site Specific - WBN

The issue that an insufficient number of catwalks and grating decks (platforms) is provided at WBN is not substantiated. This determination is made based primarily upon the application of the standards as cited above in 3.3.6 and interviews concerning the regularity at which equipment must be accessed by employees. Findings revealed that a mechanism (PAS) is currently in place by which areas needing a platform can be identified and supplied with one.

WBN relies on its plant access survey to identify locations which may benefit from the provision. The survey has been conducted twice, the most recent being conducted in the fall of 1985. The survey has been updated in 1986 by inclusion of additional locations and information provided through the Employee Safety Suggestion Program, Employee Involvement Program, and crew safety meetings. Additional updating of the survey will be done as plant maintenance and operating experience is gained. These methods of determining platform needs are deemed effective provided that continued updating, tracking and follow-up activities are achieved. There is currently no written procedure which guarantees the perpetuation of these activities.

No information was found suggesting that WBN is not providing needed access by way of permanently installed grating decks or platforms where areas needing them have been identified. Areas which are accessed at a frequency less than that specified in STD1-1.13 are to be provided with temporary platforms (scaffolding) or portable ladders where necessary. This need is to be identified during the normal prejob safety planning activities. Most activities in these areas will not meet the minimum frequency requirements.

WBN has taken steps to alleviate the problems in areas which have been identified as requiring improved access. Examples of this effort are: A) an FCR to install a cable for lanyard attachment to provide safe access on top of holdup tank 1A for a preventive maintenance activity; B) a DCR to extend and connect the platforms providing access to steam generators (SG) 4 and 1 and SG 2 and 3; C) a Maintenance Request (MR) to provide a platform at the cation tanks A and B trains. Other locations are under evaluation by the access survey team which is composed of representatives of the mechanical, instrumentation, operations, and safety sections.

Inspections revealed catwalks, platforms and grating decks to be provided at WBN. Plant maintenance and operations histories are continuing to evolve providing information which may necessitate additional installations. This is an ongoing process and does not constitute any noncompliance with industry standards.

4.6.2 Findings/Concerns

4.6.2.1 Site Specific - WBN

The findings of this evaluation do not substantiate the issue as cited against the applied standards. Findings revealed that a written procedure ensuring continuation of the Plant Access Survey and its intended functions is not present. Even though no standard exists which requires such a procedure, the continuation of the Plant Access Survey Program is considered to be neccessary.

4.7 Floor Openings

4.7.1 Discussions

4.7.1.1 Site Specific - WBN

The concern in this issue was substantiated in that unguarded openings were allowed to exist in violation of the standards referenced in section 3.3.7. However, inspections and observations made subsequent to this finding revealed the existence of no other unguarded openings. Therefore, the hazard as identified in the associated concern was determined to be an isolated event. Thus, this concern, as an issue, is not substantiated.

This concern was originally investigated in October 1985, and the findings were provided in a report to the concerned individual. The location identified in the concern was determined after additional information was obtained from Quality Technology Company (QTC) on October 9, 1985. Inspection of the area by this evaluator was conducted and the basis for the concern substantiated on October 16, 1985.

The openings were in violation of the cited standards which require protection for openings where employees may accidentally walk.

Two round metal ventilation ducts, each measuring approximately 24 inches in diameter, were found to be in close proximity to a temporary scaffold and short access ladder on elevation 747, unit two, RB near steam generators 2 and 3. The ventilation ducts adjoin the main ventilation duct header

following a vertical drop of 6 to 7 feet. The two duct openings were observed to be in an unguarded condition (no grating or cover). Although the duct openings were not part of the scaffold walking surface, they were terminated at the same elevation and immediately adjacent to the scaffold deck. No other barricade (such as a guardrail to prevent personnel from stepping into the duct openings) was provided. Based upon these findings, the openings were in violation of the standards identified in section 3.3.7 of this report and were deemed to present a hazard to personnel working in the area.

The DNC Sheetmetal Superintendent was contacted on October 17, 1985, concerning the lack of guards on the duct openings. He was not aware of the unguarded condition of the ducts. He stated that covers had been installed at one time, and that he had no knowledge of what had happened to the original covers. Agreement was made to install two expanded metal screens to prevent personnel or material from falling into the ducts. This was accomplished and a follow-up inspection conducted by this evaluator on October 23, 1985, provided verification of the results.

Subsequent inspections on April 14, 1986, and June 11, 1986, revealed the guards to be still in place over the duct openings. Continued inspections of plant areas including the Turbine, Auxiliary, and Reactor Buildings revealed no instances in which floor openings were found to be in an unguarded state. WBN and DNC Health and Safety Committee inspections and WBN Quarterly Inspections were reviewed for the period of February 1984 - March 1986 with no deficiencies of this nature being documented.

Although the concern was substantiated, the issue by definition ("Floor Openings Not Adequately Guarded") could not be substantiated as a plant-wide concern. This conclusion is based upon the following findings:

- The condition of the unguarded ventilation duct openings was not found to exist in the plant areas inspected and was, therefore, determined to be a single, isolated event.

- No other conditions of unguarded floor openings were observed.

- The duct opening hazard was abated and has remained guarded for an extended period of time (eight months).

4.7.2 Findings/Conclusions

4.7.2.1 Site Specific - WBN

The findings of this evaluation revealed that floor openings are guarded according to industry standards and where identified as presenting a hazard to employees. The single concern which initiated this issue was not sufficient evidence to substantiate a plant-wide finding.

5.0 COLLECTIVE SIGNIFICANCE

5.1 Management Effectiveness

Walking and working surfaces are being effectively managed at WBN. However, management has been less effective in managing the portable ladder program. Management has failed to ensure that portable ladders are returned to their proper storage location following each usage. Since these ladders are "scattered" throughout the plant, no effective maintenance program can be implemented, and employees must often use unsafe substitutes or climb up pipes and supports in order to get a job done. These resulting actions increase employee risk.

5.2 Employee Effectiveness

Employees have failed to comply with plant procedures requiring the return of portable ladders to their designated storage locations. This impacts other employees who must have a ladder to safely complete a job.

5.3 Technical Adequacy

Fixed ladders at WBN often have interferences involving piping and conduit obstruction to proper foot placement on the ladder rungs. This situation greatly increases the potential for an accident or injury associated with these ladders, and also increases the possibility that insulation or installed instrument lines will be damaged.

6.0 CAUSES

The following is a discussion of the causes identified for those issues requiring corrective action.

6.1 Portable Ladders

The failure of the WBN portable ladder program is caused by a lack of supervisor or foreman involvement in and responsibility for the daily activities of their employees. It is also caused by a lack of communication of existing site ladder requirements from line management to employees.

6.2. Fixed Ladders

Ladders rung obstruction by piping and supports is caused by inadequate or improper review of field activities (for small diameter field-routed pipe and conduit) and design inadequacies.

6.3 Plant Access Survey

There is no written plant procedure requiring a periodic plant personnel and equipment access survey. Even though such surveys are being conducted, this resulted in a lapse of survey data for the period of 1982-1985.

7.0 CORRECTIVE ACTIONS

No immediate corrective actions or stop work orders were initiated as a result of this evaluation. No outstanding corrective actions exist as a result of any prior investigation of the employee concerns addressed by this report. Three organizations within ONP (WBN, DNC, and DNE) are taking corrective actions to alleviate problems identified in this evaluation.

Inadequate communication between line management and employees concerning industrial safety issues is addressed by Corrective Action Tracking Documents (CATDs) within the Industrial Safety Category as follow:

Subcategory Report 90100, Management of Safety.

CATD 90100-1, 5, 9 and 13 establish a Central Safety Committee (CSC) comprised of line management. CATD 90100-2, 6, 10 and 14 establish varous line management subcommittees to the CSC. CATD 90100-3, 7, 11 and 15 establish a safety audit program. One of the principle

purposes of the CSC will be to communicate and to cause the enforcement of the industrial safety program through line management to the employees.

The following is a listing of the corrective actions generated as a result of this evaluation.

7.1 WBN

a. PROBLEM DESCRIPTION: HCI-M2, Ladders, is not being fully implemented to ensure the availability of portable ladders in the plant. The instruction is not communicated to employees and enforced through supervision. Portable ladders are not returned to designated storage locations in the plant. This nonavailability of portable ladders serves to encourages employees to climb fixed equipment (pipe, etc.) rather than bother with searching for one not in use.

Corrective Action

CATD No. 90900-1: WBN will review HCI-M2 to require quarterly plant inspections to return unused ladders to their proper locations. These inspections will be performed by the Building Services Section. The HCI will be revised by January 1, 1987.

Enforcement of the ladder procedure will be a priority item to be addressed by the Safety Audit Program. The ONP safety bullentin ("Hazardline") will communicate the need to comply with HCI-M2 and cover any necessary procedure changes.

b. PROBLEM DESCRIPTION: There is no written procedure/instruction which provides for the plant access survey to be conducted on a periodic basis and to ensure continual updating and tracking of identified items. The survey is relied upon to identify areas of the plant which may require additional installations to improve access to equipment. Failure to track and update the survey findings can result in exposure of employees to fall potentials as plant maintenance and operational activities evolve.

Corrective Action

CATD No. 90900-3: The ONP Safety Section Action Item Log will be revised to include the access survey as an agenda item for the Central Safety Committee. This committee will review and

discuss the need for an additional survey to be conducted every two years. The section Action Item Log will be revised by November 1, 1986.

c. PROBLEM DESCRIPTION: Interferences with fixed ladders are numerous throughout the plant. This is a problem which is shared with DNC and DNE. Piping and conduit interferences prohibit adequate placement of the foot on ladder rungs. This constitutes noncompliance with OSHA standards which dictate minimum clearances allowable.

Corrective Action

CATD No. 90900-6: WBN will conduct a survey of all fixed ladders in plant areas, transferred from DNC. The ladders will be inspected for deficiencies. Noted deficiences will be evaluated and corrective action initiated by March 1, 1987.

7.2 DNC

a. PROBLEM DESCRIPTION: WBN has a Hazard Control Instruction (HCI-M2, Ladders) which when fully implemented will control portable ladders in designated storage locations within the plant. Employees of DNC, MODIF, WBN, and EG&G share these ladders from time to time. Organizations which use plant ladders are not aware of the plant instruction which governs their use. The instruction is not being communicated to employees and enforced by supervisors.

Corrective Action

CATD No. 90900-2: The Construction Superintendent's Office will reemphasize the portable ladder inspection process to all craft managers by September 1, 1986.

Craft Managers will conduct a demand/supply evaluation of portable ladder needs and adjust inventory as indicated. Site inspection processes will include observations of portable ladder use and condition. The Crew Safety Monitor Report will be upgraded to reflect this item. These actions will be taken by October 1, 1986.

The Central Safety subcommittee on rules and procedures will be approached for combining of WBN and DNC requirements where possible. This will be placed on the subcommittee agenda by January 1, 1987

b. PROBLEM DESCRIPTION: Interferences with fixed ladder rungs are numerous throughout the plant. Some of these interferences involve piping and conduit which has been field routed in violation to OSHA Standards which dictate minimum clearances allowable.

Corrective Action

CATD No. 90900-4: The Construction Engineer's Office will submit an advisory memo to DNE regarding design of ladder systems to preclude interferences. The memo will be initiated by September 1, 1986. Additionally, this problem will be brought before the Central Safety Committee by January 1, 1987.

DNC site inspection processes will include the installation of ladder systems as a part of the process. This will be initiated by October 1, 1986.

Fixed ladders under DNC jurisdiction will be reviewed by the Civil Engineering Unit and revised as necessary to comply with clearance requirements. This will be completed by December 1, 1986.

7.3 DNE

a. PROBLEM DESCRIPTION: Interferences with fixed ladder rungs are numerous throughout the plant. Some piping interferences greater than two inches in diameter indicate inadequacies in the design review process.

Corrective Action

CATD No. 90900-5: DNE will issue a policy memorandum on mandatory industrial safety design requirements. This policy memorandum will outline the types of requirements and will implement inclusion of these requirements into the appropriate design input and output documents. DNE will also develop a design standard which will be used to reference industrial safety requirements in design input documents, and a Design Requirements Specification which will be referenced on drawings and other design output documents.

In addition to the above, DNE will revise a line item in the Engineering Change Notice checklist of Nuclear Engineering Procedure 6.1. This revision will emphasize the lead engineer's responsibility to have the proposed engineering change reviewed to determine its effect on the mandatory industrial safety design requirements.

8.0 LIST OF EVALUATORS

D. K. Gray

C. R. Petty

J. T. Rogers

9.0 ATTACHMENTS

Attachment A, Subcategory Summary Table

EFERENCE - ECPS131J-ECPS131C
REQUENCY - REQUEST
NP - ISSS - RNM

TEGORY: SF INDUSTRIAL SAFETY

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
X -85-032-00101 T50138	SF	901	S	WBN	1 Y	N	Y	Y		QTC	THE TVA INDUSTRIAL SAFETY PROGRAM IS NOT ADEQUATE AND REQUIRES CONSIDERABLY MORE ENFORCEMENT. EXAMPLES: 1. UNIT #2 PIPE CHASE AND RB ARE VERY UNSAFE BUT NO ACTION HAS BEEN TAKEN TO ADDRESS PROBLEMS FOUND HERE (TRIPPIR LINES, AND ELECTRIC ABLES ARE LAYING IN WALKWAYS AND CONSTITUTE TRIPPING HAZARDS. 3-MOST SCAFFOLDS ARE NOT ADEQUATELY BUILT IN THAT NO TOE BOARDS ARE INSTALLED. CI HAS NO ADDITIONAL INFORMATION. CONSTRUCTION DEPT. CONCERN. NO FOLLOW UP REQUI	1.5, 4.5
					2 NO	NA	NO	NO				
					3 D	NA	D	D				
02	SF	909	S	WBN	1 N	N	N	Y				
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				
X -85-033-00101 T50138	SF	909	N	WBN	1 N	N	N	Y	EX-85-033-001	QTC	THERE ARE NO TOE BARS ON THE SCAFFOLDING IN UNIT #2 AND THIS POSES AN INDUCSTRIAL SAFETY HAZARD. CI HAS NO MORE INFORMATION. NUC PWR. DEPT. CONCERN. NO FOLLOW UP REQUIRED.	1.5, 4.5
					2 NA	NA	NA	NO				
					3 NA	NA	NA	C				
X -85-033-00201 T50138	SF	909	N	WBN	1 N	N	N	Y	EX-85-033-002	QTC	THE LADDERS IN UNIT #2 ARE NOT TIED OFF AND THIS POSES AN INDUSTRIAL SAFETY HAZARD. CI HAS NO MORE INFORMATION. NUCLEAR POWER DEPT. CONCERN. NO FOLLOW UP REQUIRED.	1.3, 4.3
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
X -85-033-00301 T50138	SF	909	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B	EX-85-033-003	QTC	UNIT #2 IS LACKING IN GOOD HOUSEKEEP ING PRACTICES, IE EXCESS MATERIAL AN D TOOLS ARE LYING AROUND POSING AN I NDUSTRY SAFETY "TRIPPING" HAZARD. C I HAS NO MORE INFORMATION. NUCLEAR PWR. DEPT. CONCERN. NO FOLLOW UP RE	1.5, 4.5
02	SF	910	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A				
X -85-044-00201 T50163	SF	901	S	WBN	1 Y N Y Y 2 NO NA NO NO 3 D NA D D		QTC	LADDERS LEADING UP TO THE ROOF OF AL L THE BUILDING NEED NON-SKID TAPE PU T ON THEM. SAFETY SUGGESTIONS AND A N MR HAVE BEEN WRITTEN ON THESE LADD ERS. NUCLEAR POWER CONCERN. CI HAS NO ADDITIONAL INFORMATION. FOLLOWU	1.2, 4.2.1.4
02	SF	909	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B				
X -85-072-00401 T50187	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B	EX-85-072-004	QTC	SOME SCAFFOLDS ARE NOT ANCHORED DOWN FIRMLY IN THE REACTOR BUILDING (UNI T NOT KNOWN) - UP BEHIND THE STEAM G ENERATOR. CONSTRUCTION DEPT CONCERN . CI HAS NO ADDITIONAL INFORMATION.	1.3, 4.3

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

EGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

	CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 90
X	-85-088-00201 T50192	SF	909	S	WBN	1 N	N	N	Y	EX-85-088-002	QTC	LADDERS AND SCAFFOLDS SHOULD BE CHECKED VERY OFTEN TO SEE THEY ARE SECURELY ANCHORED BEFORE USING. CONSTRUCTION DEPT. CONCERN. CI HAS NO ADFDITIONAL INFORMATION. -GENERIC CONCERN-	1.3, 4.3, 1.3 4.2.1.2
						2 NA	NA	NA	NO				
						3 NA	NA	NA	B				
X	-85-125-00101 T50195	SF	909	N	WBN	1 N	N	N	Y	EX-85-125-001	QTC	OSHA SHOULD BE ON THE JOB SITE. SCAFFOLDING IS ERECTED WITHOUT PROPER HAND RAILS AND TOE BOARDS. NO SPECIFIC LOCATIONS OR INCIDENTS WERE PROVIDED BY CI. CONSTRUCTION CONCERN. UNIT 2. CI HAS NO FURTHER INFORMATIO	1.3, 4.3
						2 NA	NA	NA	NO				
						3 NA	NA	NA	B				
N	-85-129-00401 T50116	SF	909	N	WBN	1 N	N	N	Y	IN-85-129-004	QTC	SAFETY ROPE BAR ON LADDER LOCATED IN UNIT 1, INSIDE REACTOR BUILDING, ON THE SIDE OF STEAM GENERATOR #4, NEEDS TO BE SHORTER AT TOP OF THE LADDER. THE SAFETY ROPE BAR EXTENDS TOO FAR ABOVE LAST RUNG OF LADDER CREATI HAS NO FURTHER INFORMATION.	1.2, 4.2.1.2
						2 NA	NA	NA	NO				
						3 NA	NA	NA	B				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -85-134-00301 T50050	SF	909	N	WBN	1 N	N	N	Y	IN-85-134-003	QTC	PERSONNEL SAFETY IS ROUTINELY COMPRO MISED BY TVA. TVA REFUSED TO BUILD SCAFFOLDS OR PROPERLY SECURE AIR LIN ES/WELDING LEADS FOR INSPECTORS, STA TING THAT IT WOULD IMPEDE INSPECTION PROGRESS TO AN UNACCEPTABLE DEGREE. AILS AVAILABLE.	1.3, 4.3
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				
N -85-240-00101 T50027	SF	909	N	WBN	1 N	N	N	Y	IN-85-240-001	QTC	A GENERIC, PLANT WIDE CONCERN THAT F INISHED CONCRETE FLOORS ARE VERY SLI PPERY AND HAZARDOUS TO PERSONNEL WAS EXPRESSED.	1.4, 4.4.1
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				
N -85-306-00101 T50188	SF	909	N	WBN	1 N	N	N	Y	IN-85-306-001	QTC	LEADS, WIRES, AIR HOSES, ETC ARE NOT PROPERLY SECURED IN UNIT 2, AND PRE SENT A PERSONNEL SAFETY HAZARD. CON STRUCTION CONCERN. CI HAS NO ADDITI ONAL INFORMATION.	1.5, 4.5
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

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

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 909
N -85-319-00301 T50254	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA E		QTC	THE PLANT NEEDS MORE PERMANENT CATWALKS AND GRATE DECKS TO ELIMINATE POTENTIAL OSHA SAFETY PROBLEMS, SAVE MONEY, AND POTENTIAL OBJECTS FOR RADIATION CONTAMINATION (SOME LACK KICK BOARDS). NO SPECIFIC INFORMATION GIVHER INFORMATION AVAILABLE IN FILE. NO FOLLOW-UP REQUIRED.	1.6, 4.6.1,
N -85-364-00101 T50107	SF	909	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-364-001	QTC	CI IS CONCERNED THAT TRIPPING HAZARDS EXISTS IN MANY CASES, EVEN THOUGH TVA POLICY PROHIBITS TRIPPING HAZARDS. SOME LOCATIONS INCLUDE: (A) ELEVATION 720' MK1A,1B,1C UNIT 2 AND MK2A,2B,2C UNIT NEED SAFETY RAILS WHERES OVER 17" OPENING THAT LACKS GUARDS. (B) ELEVATION 696' 4 1/2" MK1 8'-9" WEST OF T-14, 2'-0" SOUTH OF H PIPES AND LINE BLOCKING LADDER. (C) ELEVATION 685' UNIT 1,5' SOUTH OF P &T-6 FOURTEEN LINES RUN THROUGH LADDER AT I-TANK, CONDENSOR POLISHER	1.1, 1.5, 4. 4.5, 7.1, 1. 4.2.1.2, 7.3
N -85-389-00501 T50098	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-389-005	QTC	UNSAFE SCAFFOLDS ONE BUILD AND USED BY CRAFTS OTHER THAN CARPENTERS. THESE SCAFFOLDS LACK TOE RAILS, AND SOLID DECKS AND OFTEN ONLY HAVE ONE WALKBOARD WITH HANDRAILS FASTENED ON OUTSIDE RATHER THAN ON INSIDE. CRAFTUCH SCAFFOLDS WITHOUT SAFETY BELTS, AND DO NOT TAG THEM FOR MANDATORY SAFETY BELT USE. (THESE SCAFFOLDS ARE LOWER THAN 2 1/2 LEVELS HIGH). CI HAD NO SPECIFIC EXAMPLES.	1.3, 4.3

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

EGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -85-416-00201 T50012	SF	909	N	WBN	1 N	N	N	Y		QTC	UNTRAINED CRAFT PERSONNEL (ALL EXCEP T CARPENTERS) ARE AUTHORIZED TO EREC T METAL SCAFFOLDING NO MORE THAT 2 1 /2 BOOKS (13 FEET) HIGH. CI FEELS T HAT THERE IS A DEFINITE POTENTIAL FO R COMPROMISING PERSONNEL SAFETY AS A	1.3, 4.3
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				
N -85-448-00101 T50034	SF	909	N	WBN	1 N	N	N	Y	IN-85-448-001	QTC	UNIT #2 IS GENERICALLY CLUTTERED WIT H WELDING CABLES, AIR HOSES, ETC., E SPECIALLY IN/ACROSS PERSONNEL WALKWA YS. THIS PRESENTS A SAFETY HAZARD T O PLANT CONSTRUCTION PERSONNEL.	1.5, 4.5
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				
N -85-464-00101 T50035	SF	901	S	WBN	1 Y	N	Y	Y	IN-85-464-001	QTC	NO HANDRAIL AROUND THE TOP OF THE IN TAKE PUMP STATION. SUGGESTION WON L AST YEAR'S SAFETY AWARD YET NOTHING HAS BEEN DONE AND INDIVIDUALS STILL HAVE TO WORK UP THERE.	1.1, 4.1.1, 7.1
					2 NO	NA	NO	NO				
					3 C	NA	D	D				
02	SF	909	S	WBN	1 N	N	N	Y				
					2 NA	NA	NA	NO				
					3 NA	NA	NA	C				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

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

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -85-468-00101 T50043	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-468-001	QTC	INDUSTRIAL SAFETY- NO CAGES ON PERMA NENT LADDERS THAT ARE MORE THAN 7 FE ET HIGH.	1.2, 4.2.1.2
N -85-554-00301 T50047	SF	901	S	WBN	1 Y N Y Y 2 NO NA NO NO 3 D NA D D	IN-85-554-003	QTC	TVA PREACHES BUT DOES NOT PRACTICE P ERSONNEL SAFETY. CI STATED THAT IN HIS DEPARTMENT (KNOWN) SCAFFOLDS ARE POORLY CONSTRUCTED AND NOT SAFE. C I EXPRESSED, HOWEVER, THAT SAFETY CO NCERNS ARE RECEIVING MORE ATTENTION TO SUPERVISORY FEAR OF BEING NAMED IN AN EMPLOYEE CONCERN. NO FURTHER DETAILS AVAILABLE.	1.3, 4.3
02	SF	909	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A				
N -85-702-00101 T50070	SF	901	S	WBN	1 Y N Y Y 2 NO NA NO NO 3 D NA D D		QTC	TVA WBNP INDUSTRIAL SAFETY PROGRAM I S NOT ENFORCED. WHEN SAFETY VIOLATI ONS ARE REPORTED, NOTHING IS DONE. EXAMPLES: WELDING LEADS, AIR LINES, AND ELECTRICAL LINES ARE SUPPOSED T O BE SUPPORTED 7' ABOVE WALKING AREA LINES.	1.5, 4.5
02	SF	909	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

TEGORY: SF INDUSTRIAL SAFETY

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	BF	BL	SQ	NB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -85-727-00201 T50069	SF	909	N	WBN	1 N	N	N	Y		QTC	AIR HOSES/WELDING LEADS ARE NOT HUNG PROPERLY (LOWER THAN 7' ABOVE FLOOR), PRESENTING A SAFETY HAZARD TO WORKERS. EXAMPLE: ON 702' ELEV., RACEWAY, UNIT 2. NO FURTHER DETAILS AVAILABLE. NO FOLLOW-UP REQUIRED.	1.5, 4.5
					2 NA	NA	NA	NO				
					3 NA	NA	NA	D				
N -85-757-00101 T50073	SF	909	N	WBN	1 N	N	N	Y	IN-85-757-001	QTC	AIR HOSES AND ELECTRICAL EXTENSION CORDS LEFT ON FLOOR OF CARPENTER SHOP. THIS HAS BEEN REPORTED TO SAFETY AND NO CORRECTIVE ACTION TO DATE. NO MORE INFORMATION AVAILABLE. NO FOLLOW-UP.	1.5, 4.5
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				
N -85-772-00701 T50123	SF	909	N	WBN	1 N	N	N	Y	IN-85-772-007	QTC	IMPROPER SLOPE AND WRONG LOCATION OF DRAINS ON THE ROOF OF AUX BUILDING AT ELEV 736'-0" CAUSES PUDDLING OF WATER. ROOF IS PAINTED WITH EPOXY, MAKING IT WORSE IN WINTER TIME WHEN SLIME FORMS CAUSING SLIPPERY AND DANGO ON THE ROOF TO TAKE CARE OF AIR CONDITIONING EQUIPMENT. CI HAS NO FURTHER INFORMATION. THIS IS NUC POWER CONCERN.	1.4, 4.4.1
					2 NA	NA	NA	NO				
					3 NA	NA	NA	C				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

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

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ HB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -85-872-00101 T50089	OP	301	S	WBN	1 2 3	IN-85-872-001	QTC	THE FLOOR GRATING NEEDS TO BE EXTEND ED IN THE AREA NEAR THE STEAM GENERA TOR MANHAYS AND BETWEEN THE TOP AND BOTTOM OF THE PRESSURIZER. THIS INC REASED WORK SPACE WOULD BENEFIT THE CRAFTS AND HEALTH PHYSICS. IT WOULD EA.	1.6, 4.6.1,
02	OP	313	S	WBN	1 2 3				
03	SF	909	S	WBN	2 NA NA NA NO 3 NA NA NA C				
N -85-872-00201 T50089	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B	IN-85-872-002	QTC	TVA SHOULD INSTALL A LADDER FROM THE UPPER CONTAINMENT TO THE TOP OF THE PRESSURIZER. THIS WOULD GIVE EMPLO YEES A SAFER METHOD FOR REACHING THE SE AREAS AND ALSO KEEP CRAFTS FROM W ALKING ON THE HVAC DUCTING.	1.2, 4.2.1.1
N -85-872-00301 T50090	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B	IN-85-872-003	QTC	ALL LADDERS IN THE LOWER CONTAINMENT SHOULD HAVE SAFETY TIE-OFFS.	1.2, 4.2.1.2

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
TEGORY: SF INDUSTRIAL SAFETY SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -85-963-00101 T50104	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-963-001	QTC	UNIT 1, TURBINE BUILDING, MAIN TURBI NE FLOOR, PERMANENT STEEL LADDER LOC ATED IN SOUTHEAST CORNER OF BUILDING DOES NOT HAVE A GUARD AROUND IT WHI CH IS REQUIRED BY TENNESSEE STATE LA W RESULTING IN UNSAFE CONDITIONS TO ION. NO FOLLOW UP REQUIRED.	1.2, 4.2.1.2
N -86-005-00101 T50099	SF	901	S	WBN	1 Y N Y Y 2 NO NA NO NO 3 D NA D D	IN-86-005-001	QTC	THE SAFETY SUGGESTION OF THE YEAR IN 1984 HAS TO ERECT A PERSONNEL HAND RAIL ON THE PERIMETER OF THE INTAKE PUMPING STATIONS ROOF. THE RAIL IS YET TO BE INSTALLED AND THE LACK OF A HANDRAIL IS A CONTINUAL HAZARD FOR E ROOF IS SLICK, PAINTED METAL AND I S IN NEED OF TRACTION FOR FOOTING,IE : EXPANDED METAL OR GRATING. CI HAS NO FURTHER INFORMATION. NO FOLLOW UP REQUIRED.	1.1, 4.1.1,
02	SF	909	S	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C				
N -86-008-00101 T50108	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B	IN-86-008-001	QTC	THE SCAFFOLDING AT EL 729' TURBINE B LDG IS NOT SAFE AND HAS NOT BEEN SAF ETY INSPECTED. THE TAG INDICATES A SAFETY INSPECTION HELD 6 MONTHS AGO. CI HAS NO FURTHER INFORMATION NO FOLLOW UP REQUIRED	1.3, 4.3

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 909
N -86-041-00101 T50112	SF	901	S	WBN	1 Y	N	Y	Y	IN-86-041-001	QTC	THE MISSLE SHIELDS ON THE INTAKE PUM PING STATION CREATE AN UNSAFE CONDIT ION DUE TO LACK OF FOOTING AND NO PL ACE TO TIE OFF SAFETY BELTS. THIS C ONDITION WAS IDENTIFIED ON A SAFETY REPORT ABOUT A YEAR AGO, BUT WAS NEV TION. NO FOLLOW UP REQUIRED.	1.1, 4.1.1,
					2 NO	NA	NO	NO				
					3 D	NA	D	D				
	02	SF	909	S	WBN	1 N	N	N	Y			
						2 NA	NA	NA	NO			
						3 NA	NA	NA	C			
N -86-054-00101 T50114	SF	901	S	WBN	1 Y	N	Y	Y	IN-86-054-001	QTC	TOP OF INTAKE PUMPOUSE STRUCTURE IS UNSAFE (NO HANDRAILS, "PLANKS" FOR W ALKING, ETC) FOR ANY INDIVIDUAL HAVI NG TO WORK ON THE MISSLE SHIELDS. C I STATED THAT HE/SHE THOUGHT SEVERAL MR'S (#'S KNOWN) HAD BEEN WRITTEN, ER CONCERN. CI HAS NO FURTHER INFOR MATION.	1.1, 4.1.1,
					2 NO	NA	NO	NO				
					3 D	NA	D	D				
	02	SF	909	S	WBN	1 N	N	N	Y			
						2 NA	NA	NA	NO			
						3 NA	NA	NA	C			
N -86-113-00101 T50122	SF	909	N	WBN	1 N	N	N	Y	IN-86-113-001	QTC	SCAFFOLDS ARE NOT BEING INSPECTED/DO CUMENTED AS REQUIRED BY THE APPLICAB LE HAZARD CONTROL INSTRUCTION. CRAF T FOREMAN ARE CURRENTLY DELEGATED TH E RESPONSIBILITY FOR THESE INSPECTIO NS ON SCAFFOLDS UNDER THEIR CONTROL. NDIVIDUAL SHOULD BE APPOINTED AS A F ULL TIME SCAFFOLD INSPECTOR TO CORRE CT THIS SITUATION. NUCLEAR POWER CO NCERN. CI HAS NO ADDITIONAL INFORMA TION.	1.3, 4.3
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

TEGORY: SF INDUSTRIAL SAFETY

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
N -86-152-00101 T50131	SF	909	S	WBN	1 N	N	N	Y	IN-86-152-001	QTC	TVA/WBNP PERSONNEL SAFETY PROGRAM IS INDEQUATE, AND SAFETY POLICIES ARE NOT UNIFORMLY ADHERED TO. SAFETY PR OBLEMS CITED WERE WELDING LEADS, AIR HOSES AND EXTENSION CORDS ARE LAYIN G EVERYWHERE AND NOT 7' OFF OF THE F MPORARY SCAFFOLDING INSTALLED WITHOU T HAND RAILS IN THE EAST VALVE ROOM, ELEVATION 40, UNIT 2. CONSTRUCTION DEPT CONCERN. CI HAS NO ADDITIONAL INFORMATION.	1.3, 1.5, 4. 4.5
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				
N -86-182-00201 T50124	SF	909	N	WBN	1 N	N	N	Y	IN-86-182-002	QTC	OPEN VENTILATION DUCTS BETWEEN LOOPS 1&4, UNIT 2, ARE A SAFETY HAZARD DU E TO NO GRATING OR OTHER PROTECTION BEING INSTALLED. CONST. DEPT. CONCE RN. CI HAS NO FURTHER INFORMATION. NO FOLLOW UP REQUIRED.	1.7, 4.7
					2 NA	NA	NA	NO				
					3 NA	NA	NA	C				
N -86-198-00201 T50125	CO	151	S	WBN	1 N	N	N	Y	IN-86-198-002	QTC	"NEEDLE BEAMS" (4"-6" HORIZONTAL BEA MS SUPPORTED BY CALBES ATTACHED TO T HE OVERHEAD, USED TO SUPPORT SCAFFOL DING) SHOULD BE LEFT INTACT WHEN WRE CKING SCAFFOLDING. REMOVING AND REI NSTALLING THESE BEAMS IS HAZARDOUS T INSTRUMENT LINES AND OTHER EQUIPENT IN THE AREA. CONST. DEPT. CONCERN. CI HAS NO FURTHER INFORMATION. NO FOLLOW UP REQUIRED.	1.3, 4.3
					2 NA	NA	NA	NO				
					3 NA	NA	NA	D				
02	SF	909	S	WBN	1 N	N	N	Y				
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 90
N -86-198-00301 T50125	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		QTC	"LEDGES" (ROOF DECKS OF SMALL SHIELDING ENCLOSURES INSIDE THE PLANT) SHOULD HAVE HANDRAILS FOR PERSONNEL SAFETY. AN EXAMPLE GIVEN WAS 692' ELEVATION, AT LINES 11-W, AUX BLDGT., NORTH END OF TANK ROOM. CONST. DEPT. INFORMATION. NO FOLLOW UP REQUIRED.	1.1, 4.1.1,
N -86-198-00401 T50124	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-86-198-004	QTC	EVERYWHERE POSSIBLE, "MONKEY LADDERS" SHOULD BE REPLACED WITH SHIP LADDERS (IINCLINED LADDERS WITH HANDRAILS) OR PERMANENT STAIRS TO AID SAFETY, AND FOR BENEFIT OF OPERATIONS PERSONNEL DURING OPERATIONS. EXAMPLE OF A SHIP LADDER IS 702' ELE., UNIT 1 0 DE AZ INSIDE CRAME WALL OF CONTAINMENT. THREE (3) YEARS AGO, MAN FELL HERE AND HURT HIS BACK. CONST. DEPT. CONCERN. CI HAS NO FURTHER INFORAMTION. NO FOLLOW UP REQUIRED.	1.2, 4.2.1.2
N -86-292-00301 T50252	SF	909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		QTC	DOOR A-56 HAS A BASE THAT TRIPS APPROXIMATELY 20% OF THE PEOPLE WHO USE THIS ENTRANCE/EXIT. NO ADDITIONAL INFORMATION IN FILE. NUCLEAR POWER DEPARTMENT CONCERN.	1.5, 4.5

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 909
BN-0025	01	SF	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C		OECP	PUT ALUMINUM GRATING PLATFORM ON SOUTH SIDE OF CATION TANKS A & B TRAINS .	1.6, 4.6.1,
BN-0028	01	SF	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	LADDER IN ANNULUS AREA BETWEEN EL.801 AND 834 DOES NOT HAVE A SAFETY CASE AROUND IT AS DO THE OTHERS. RECOMMEND INSTALLING CAGE AROUND LADDER.	1.2, 4.2.1.2
BN-0029	01	SF	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C		OECP	A PM REQUIRES THE VACUUM BREAKER ON TOP OF HOLDUP TANK 1A BE CHECKED PERIODICALLY (AUX BLDG EL 672). THERE IS A LADDER TO GET TO THE TOP OF THE TANK BUT NO SAFE WAY TO GET OUT ONTO THE TANK. AT A MINIMUM, A LIFELINE SO A LANYARD CAN BE ATTACHED.	1.6, 4.6.1,

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

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

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	SHR D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 90
BN-0128	01	SF	909	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA D		OECP	3" S/S PIPING BEING USED AS A STEP. INTERFERING WITH STEEL LADDER LEADIN G TO PLATFORM. RC PUMP #1 AZ 83 DEG REES ELEV. 716. SLIP OR FALL HAZARD.	1.2, 4.2.1.1. 7.1, 7.2, 7. 1.4, 4.4.1
BN-0286HP	01	SF	909	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A		OECP	UNNECESSARY LOCALIZED FLOODING FROM HOSES RUN TO FLOOR DRAINS.	1.4, 4.4.1
BN-0289	01	SF	909	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C		OECP	SLIPPING HAZARD ON RCP PLATFORMS DUE TO OIL SEAPAGE FROM LEFT PUMPS AND MOTOR SHAFT.	1.4, 4.4.1

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	SHRD	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
BN-0298	01	SF	909	N WBN	1 N	N	N	Y		OECP	VALVES IN 713 PIPECHASE ARE EXTREMEL Y HARD TO GET TO. FIXED WORK PLATFO RMS WOULD IMPROVE SAFETY.	1.6, 4.6.1,
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				
BN-0366	01	SF	909	N WBN	1 N	N	N	Y		OECP	INSTALL HANDRAIL ON WALL (ELEVATION 713) AT TOP OF STEPS DIRECTLY IN FRO NT OF SUB/HATCH. EXISTING HANDRAIL I S TOO FAR LEFT CAUSING UNBALANCE WHE N CARRING TOOLS OR EQUIPMENT FROM RA CEWAY.	1.1, 4.1.1,
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				
BN-0398	01	SF	909	N WBN	1 N	N	N	Y		OECP	713 ANNULUS AREA ENTRY - NEED LADDER ON LEFT SIDE OF PLATFORM TO GIVE EA SY ACCESS TO MAIN LADDER. ALSO NEED SIGNS PAINTED AND PLACED TO DIRECT PERSONNEL TO MAIN LADDER.	1.2, 4.2.1.1
					2 NA	NA	NA	NO				
					3 NA	NA	NA	B				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTIO CAT - SF SUBCAT - 90
BN-218IS	01	SF 909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	A PERMANENT WALKWAY ACROSS THE CHECK VALVES IN MSVR SHOULD BE BUILT TO ALLOW EASIER ACCESS. OTHERWISE MUST CLIMB OVER THE VALVES WHICH WILL BE VERY HOT AFTER START UP OR GO THRU DOOR A-106 WHICH HAS NO CARD READER A OPENED.	1.6, 4.6.1,
BN-235	01	SF 909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA D		OECP	ACCESSIBILITY TO LADDERS IS A PROBLEM BECAUSE LADDERS ARE CONSTANTLY BEING ROBBED FROM THEIR PERMANENTLY ASSIGNED STATIONS.	1.2, 4.2.1.1 7.1, 7.2,
BN-300	01	SF 909	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	NO SAFE ACCESS EXISTS TO GET TO VALVES LOCATED ON MEZZANINES ABOVE THE VCT ROOM OR ABOVE THE VALVE GALLERY JUST OUTSIDE THE 713 PENETRATION ACCESS DOOR.	1.2, 4.2.1.1

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
TEGORY: SF INDUSTRIAL SAFETY SUBCATEGORY: 909 WALKING AND WORKING SURFACES

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 90
BN-500IS	01	SF	909	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	CI SUGGESTS PLACING ABRASIVE STRIPS ON THE FLOOR INSIDE DOORS A-207 AND A-209. THIS COULD HELP PREVENT FALL S UPON ENTERING THE BUILDING WHEN IT IS WET OUTSIDE.	1.4, 4.4.1
BN-85-005	01	SF	909	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	CI SUGGESTS CONSTRUCTING A GUARD RAI L AROUND THE MANHOLE INSIDE THE AIR LOCK ON EL 716.	1.1, 4.1.1,
BN-85-006	01	SF	909	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	CI BELIEVES INSULATION SHOULD BE REP LACED ON EL 713 IN THE PIPE CHASE NE XT TO THE BORON INJECTION TANK. TO P REVENT FURTHER DAMAGE, CI SUGGESTS C ONSTRUCTING A WALKWAY ACROSS THE PIP ES. CI BELIEVES THIS WOULD IMPROVE	1.6, 4.6.1.1 7.1

54 CONCERNS FOR CATEGORY SF SUBCATEGORY 909

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

ECSP Corrective Action Tracking Document (CATD)

INITIATION

1. Immediate Corrective Action Required: ☐ Yes ☑ No
2. Stop Work Recommended: ☐ Yes ☑ No
3. CATD No. 90900-2
4. INITIATION DATE 08/11/86
5. RESPONSIBLE ORGANIZATION: ONP-NU CON, WBN
6. PROBLEM DESCRIPTION: ☐ QR ☐ NQR WBN has a Hazard Control Instruction (HCI-M2, Ladders) which when fully implemented will control portable ladders in designated storage locations within the plant. Employees of NU CON, MODIF, WBN, and EG&G share these ladders from time to time. Organizations which use plant ladders are not aware of the plant instruction which governs their use. The instruction is not being communicated to employees and enforced by supervisors.

7. PREPARED BY: NAME David K. Grant ☐ ATTACHMENTS DATE: 08-11-86
8. CONCURRENCE: CEG-H Lon Elliott DATE: 8-12-86
9. APPROVAL: ECTG PROGRAM MGR. _____ DATE: _____

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN: SEE ATTACHMENT

11. PROPOSED BY: DIRECTOR/MGR: Ben J. Rinaldi ☐ ATTACHMENTS DATE: 8/19/86
12. CONCURRENCE: CEG-H: Phil Trudeau for L C Ellis DATE: _____
SRP: _____ 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

1. Immediate Corrective Action Required: ☐ Yes ☑ No
2. Stop Work Recommended: ☐ Yes ☑ No
3. CATD No. 90900-1 4. INITIATION DATE 08-11-86
5. RESPONSIBLE ORGANIZATION: ONP WBN
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR HCI-M2, Ladders, is not being fully implemented to ensure the availability of portable ladders in the plant. The instruction is not communicated to employees and enforced through supervision. Portable ladders are not returned to designated storage locations in the plant. This non-availibility of portable ladders serves to encourage employees to climb fixed equipment (pipe, etc.) rather than bother with searching for one not in use.

☐ ATTACHMENTS

7. PREPARED BY: NAME W. David K. Gray DATE: 08-11-86
8. CONCURRENCE: CEG-H for Ellis DATE: 8/13/86
9. APPROVAL: ECTG PROGRAM MGR. _____ DATE: _____

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:
See attached.

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: _____ DATE: _____
12. CONCURRENCE: CEG-H: D H Petrie for CC Ellis DATE: _____
SRP: _____ DATE: _____
ECTG PROGRAM MGR: _____ DATE: _____

VERIFICATION AND CLOSEOUT

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

SIGNATURE	TITLE	DATE

1554T

ECSP Corrective Action Tracking Document (CATD)

INITIATION

1. Immediate Corrective Action Required: ☐ Yes ☑ No
2. Stop Work Recommended: ☐ Yes ☑ No
3. CATD No. 90900-3 4. INITIATION DATE 08-11-86
5. RESPONSIBLE ORGANIZATION: ONP WBN
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR There is no written procedure/ instruction which provides for the plant access survey to be conducted on a periodic basis and to ensure continual updating and tracking of identified items. The survey is relied upon to identify areas of the plant which may require additional installations to improve access to equipment. Failure to track and update the survey findings can result in exposure of employees to fall potentials as plant maintenance and operational activities evolve.

☐ ATTACHMENTS

7. PREPARED BY: NAME David K. Gray DATE: 08-11-86
8. CONCURRENCE: CEG-H Lon E. Ellis DATE: 8-13-86
9. APPROVAL: ECTG PROGRAM MGR. _____ DATE: _____

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:
See attached.

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: _____ DATE: _____
12. CONCURRENCE: CEG-H: D.A. Petrea for LC Ellis DATE: _____
SRP: _____ 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

1. Immediate Corrective Action Required: ☐ Yes ☑ No
2. Stop Work Recommended: ☐ Yes ☑ No
3. CATD No. 90900-4 4. INITIATION DATE 08-11-86
5. RESPONSIBLE ORGANIZATION: ONP NU CON
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR Interferences with fixed ladder rungs are numerous throughout the plant. Some of these interferences involve piping and conduit which has been field routed in violation to OSHA Standards which dictate minimum clearances allowable.

☐ ATTACHMENTS

7. PREPARED BY: NAME David B. Gray DATE: 08-11-86
8. CONCURRENCE: CEG-H Lon Ellis DATE: 8-13-86
9. APPROVAL: ECTG PROGRAM MGR. _____ DATE: _____

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN: SEE ATTACHMENT

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: Gus Painter DATE: 8/19/86
12. CONCURRENCE: CEG-H: Peter for LCEllis DATE: _____
SRP: _____ 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

1. Immediate Corrective Action Required: ☐ Yes ☒ No
2. Stop Work Recommended: ☐ Yes ☒ No
3. CATD No. 90900-85 4. INITIATION DATE 08-11-86
5. RESPONSIBLE ORGANIZATION: ONP WBN DNE
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR Interferences with fixed ladders are numerous throughout the plant. This is a problem which is shared with NU CON and DNE. Piping and conduit interferences prohibit adequate placement of the foot on ladder rungs. This constitutes noncompliance with OSHA standards which dictate minimum clearances allowable.

☐ ATTACHMENTS

7. PREPARED BY: NAME David K. Gray DATE: 08-11-86
8. CONCURRENCE: CEG-H Lon C. Ellis DATE: 8/15/86
9. APPROVAL: ECTG PROGRAM MGR. _____ DATE: _____

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN: The clearance requirements for fixed ladders are given in OSHA General Industry Standard 1910.27(c). This standard can be found in the TVA Occupational Health and Safety Manual. In order to prevent piping interferences with fixed ladder in the future, appropriate Watts Bar Mechanical personnel involved in pipe routing will be given instruction in Health and Safety Course HS164 (TVA Health and Safety Design Criteria). This program outlines the various facility design criteria that is provided or referenced in the General Industry (1910).

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: D. L. Kaylor DATE: 8-29-86
12. CONCURRENCE: CEG-H: D. Watson for ICEllis DATE: _____
    SRP: _____ 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

1. Immediate Corrective Action Required: ☐ Yes ☑ No
2. Stop Work Recommended: ☐ Yes ☑ No
3. CATD No. 90900-6 4. INITIATION DATE 08-11-86
5. RESPONSIBLE ORGANIZATION: ONP WBN
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR Interferences with fixed ladders are numerous throughout the plant. This is a problem which is shared with NU CON and DNE. Piping and conduit interferences prohibit adequate placement of the foot on ladder rungs. This constitutes noncompliance with OSHA standards which dictate minimum clearances allowable.

☐ ATTACHMENTS

7. PREPARED BY: NAME David K. Gray DATE: 08-11-86
8. CONCURRENCE: CEG-H Lon Ellis DATE: 8-11-86
9. APPROVAL: ECTG PROGRAM MGR. _____ DATE: _____

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:
See attached.

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: _____ DATE: _____
12. CONCURRENCE: CEG-H: DH Peterson for (CEGH) DATE: _____
SRP: _____ DATE: _____
ECTG PROGRAM MGR: _____ DATE: _____

VERIFICATION AND CLOSEOUT

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

SIGNATURE	TITLE	DATE