TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

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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 re-urrence.

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

The issues grouped under this subcategory pertain to a plant's ability to respond promptly and correctly to emergencies, both medical and fire, with the emergency equipment available for use by plant personnel. There are no concerns classified as "Nuclear Safety-Related" addressed in the document.

Though individually the issues cover a diversity of subjects, collectively they describe a group of concerns which question the plant's ability to respond to a variety of emergency conditions.

The concerns were grouped into eight distinct issues as follows:

1.1 Fire Fighting Equipment, includes two concerns dealing with the availability and maintenance of fire fighting equipment.

1.2 Self-Contained Breathing Apparatus, (SCBA) contains five individual concerns. Three questioned the location of SCBA storage while two pertained to the use of 5-minute emergency escape devices.

1.3 Emergency Lighting, contains a single concern which contends emergency lighting, which is required in the Turbine Building (TB) stairwells, has not been installed.

1.4 Emergency Eyewash and Shower, originally contains one concern; later three concerns from the employee concerns program and safety suggestion program were added. This issue questions the availability of emergency eyewash and shower facilities.

1.5 Response to Medical Emergencies, groups seven concerns that contend emergency medical response is slow and responders are not competent.

1.6 Annulus Work, contains six concerns which contend working in the annulus is unduly dangerous due to crowded conditions, a lack of procedures, and inadequate means of communications.

1.7 Ambulance, has a single concern that reported the wheeled stretcher in the Division of Nuclear Construction (DNC) ambulance and the wheeled stretcher in the plant ambulance were not interchangeable.

1.8 Inadequate Site Drills and Evacuation Plans, contains two concerns which question the plant's ability to evacuate all personnel in the event of a radiological emergency and specifically the ability to evacuate handicapped individuals in case of a site evacuation.

In short, this subcategory examines the adequacy of the mobile equipment, fixed equipment, personal protective equipment, training, and procedures which are in place at WBN for the protection of life and health under emergency conditions.

2.0 SUMMARY

The individual concerns, when examined as a group, suggest planning for emergency situations has not been adequate.

The following is an issue by issue summary of the individual concerns, the process used to evaluate the concerns, the validity of the concerns as sited against requirements, causes and significance, and corrective actions taken and results achieved.

2.1 Fire Fighting Equipment, contains two concerns. IN-85-996-C03 alleges the DNC "Class A" pumper arrived on the scene of an engine fire on the plant firetruck on March 11, 1985 without water in its tank. This concern was investigated by this evaluator and the DNC Public Safety/Firefighter Lieutenant and found to be not substantiated. The pumper had a full 750-gallon tank of water at the time of the incident. The pneumatic pump engagement valve for the Waterous pump malfunctioned causing an apparent "no water" condition to be perceived by onlookers. DNC firefighters did manage to place the pumper in operation; however, it was not needed to control and extinguish the fire. The vehicle (firetruck) involved in this incident has since been replaced due in part to the unreliability of the pumper equipment.

IN-85-322-001 alleged a fire extinguisher was needed in the small abrasive blasting and paint shop for hangers located east of the Turbine Building as "several" small fires had occurred in this building requiring the firetruck for extinguishment. This concern was found to be not substantiated. Neither the blast and paint shop nor any of the buildings which surrounded it are standing at this time. The conditions which existed at the time of this concern were within the requirements of OSHA and the guidelines of the National Fire Protection Association (NFPA). Travel distance to an extinguisher recommended by the NFPA for such conditions is 75 feet.

The estimated maximum travel distance from the door of the shop to the farthest of four 10-pound type ABC extinguishers mounted on adjacent crew shacks was 50 feet. A review of the DNC fire log revealed no reports of any fire in this facility as alleged.

As individual concerns and as a group the allegations in element 90801 "Fire Fighting Equipment" are not substantiated.

2.2 Self-Contained Breathing Apparatus, contains five individual concerns. IN-85-319-002 and WBN-0293 contend self-contained breathing apparatus (SCBAs) should be conveniently located throughout the plant. These concerns were evaluated by determining which plant activities require the use of a SCBA and the availability of SCBAs for such activities. While there are no

requirements for locating SCBAs throughout a facility, there are requirements in the OSHA guidelines for a "minimum respiratory protection program" which mandate training, fit-testing, periodic inspection, maintenance, and surveillance of the use of SCBAs. There is also a prohibition against storing materials, including rescue equipment, in stairwells as suggested in IN-85-319-002. Plant activities rarely require the use of SCBAs. When the need for a SCBA is identified for nonemergency activities, training is provided by the Safety Staff. SCBAs for emergency use are located in centralized storage facilities which are normally locked. In this way, a predetermined number of respirator units are available for the trained emergency team's use and are secure from both damage and tampering which could render the units unsuitable for use.

IN-85-938-002 contends SCBAs should be provided in the elevation 692 Control Building Central Alarm Station (CAS) to allow Public Safety personnel in the CAS enough time to switch control to the Secondary Alarm Station (SAS) in the event evacuation of the CAS is necessary. Public Safety Supervision indicates no "change over" to the SAS is required. The two stations, CAS and SAS, are redundant. Only a notification that the CAS was being evacuated would be necessary. The event most likely to cause the CAS to be evacuated would be a carbon dioxide (CO_2) discharge from the fire protection system in the Control Building, elevation 708, auxiliary instrument rooms or the computer room. The CO_2 would then penetrate by gravity and pressure to the lower elevation where the CAS is located thereby causing an oxygen deficient atmosphere. A drop in the percentage of oxygen in air from 20.8 percent to 20.0 percent would be considered "oxygen deficient."

There are several reasons why this scenario is unlikely: The CO_2 system is presently valved out. The system does not "normally" discharge the entire vault contents into a single room but rather a sufficient quantity to reduce the room's oxygen content to 8 percent. The CO_2 would have to leak past at least two fire doors and/or through sealed penetrations to enter the CAS; by this point the CO_2 would have become considerably diluted. A CO_2 alarm for each of the CO_2 protected areas on Control Building (CB) 708 is wired in the CB 692 hallway to give advance warning of a discharge on the floor above. In support of the contention that SCBAs are needed in the CAS is a report by Fire Protection Personnel which shows 15 percent oxygen readings at floor level on elevation 692 after a CO_2 discharge on elevation 708 have occurred (November 3, 1982). No oxygen deficiency was noted in the breathing zone (5 feet). The CO_2 fire protection system is sufficiently unreliable to warrant its proposed removal as a fire suppression system. Three 5-Minute Escape Packs were provided in the CAS. Three SCBAs were provided as requested by Public Safety since it was believed five minutes may not provide sufficient time to evacuate the central alarm station. This action was the result of PSS Safety suggestions and not the Employee Concerns Program.

Two concerns regarding the location and use of the 5-minute emergency escape air packs were generated through the Site Employee Concerns Program.

WBN-0064 suggested a second escape pack be provided in the yard CO_2 vault as there are normally two workers in this confined space. Entry into such spaces is planned for by using HCI-G8 "Confined Spaces." There are other measures which also protect workers in the vault: a safety observer equipped with an SCBA and a telephone at the stairs; a pre-entry air check and constant monitoring; and exhaust ventilation from the floor of the vault. Nevertheless, it was believed possible to have a sudden event which could make the use of the 5-minute "escape" pack necessary. A second escape pack was installed.

RMM-85-003 questions how to use the 5-minute escape packs. This is a Sequoyah concern and has been answered by Sequoyah (SQN) Safety Staff. There, an initial orientation, special requested instruction sessions, and a written procedure in Hazard Control Instruction HCI-PPE.22 are used to instruct users of the 5-minute escape packs. At WBN, training has been provided to the following groups: Nuclear Services Branch (NSB) which is now a part of Modifications, Electrical Maintenance, Instrument Maintenance, Laborers and Janitors, and Quality Assurance/Quality Control (QA/AC). These sessions did not cover all employees that might have occasion to use a 5-minute escape pack, therefore, it is likely some employees may need instruction on escape pack use. Written instructions are found in HCI-PPE10. This concern is not substantiated for WBN.

The overall evaluation of this group of concerns did not substantiate the issues when compared against the written requirements of TVA and OSHA.

Improvements in the number and location of SCBAs and escape air packs was an enhancement of the existing conditions.

2.3 Emergency Lighting, contains a single concern IN-85-168-002 which alleges emergency lighting has not been installed in the Turbine Building stairwells as required by the "life safety code." This issue is substantiated; however, corrective action was planned before the concern was submitted. TVA recognized the emergency lights are required as per NFPA 101 "Life Safety Code." Engineering Change Notice (ECN) 3161, 1983, has been issued to accomplish the installation of the necessary emergency lights approximately two years prior to the Employee Concerns Program (ECP).

2.4 Emergency Eyewash/Shower, contains five concerns which question the location of emergency eyewash/shower stations and a single concern questioning the availability of the eyewash stations in the Diesel Generator Building during potable water outages at Sequoyah.

A review of the requirements for emergency eyewash/shower facilities as found in 29 CFR 1910.151(c) indicates facilities for quick drenching or flushing of eyes and body parts shall be provided in the work area where there is an exposure to corrosive materials. Guidelines for travel distances to the eyewash/shower in ANSI Z358.1-1981 indicate a 100-foot travel distance under normal circumstances is acceptable; this is reduced to 10 feet where highly corrosive materials are involved.

A physical inspection of all areas noted in the concerns was conducted and the following was determined:

IN-85-115-003 contends a blinded person working inside the Acid and Caustic Building would be unable to locate and use the eyewash and shower located outside the building, and suggests the device be moved to a more convenient location.

An evaluation of the activities conducted at the Acid and Caustic Building indicated the greatest risk from a spray of sulfuric acid, caustic solution, ammonia, or hydrazine occurs during bulk or drum transfer operations. During these operations the exposed employees are outside and within the 100-foot travel distance to the eyewash/shower at all times though rarely within 10 feet.

Additional protection is afforded by utilizing the Hazard Control Instructions which provide specific guidance regarding personal protective equipment requirements for hazardous materials in general, and the chemicals in question at the Acid and Caustic Building specifically. Though this is not a substantiated concern based on the requirements applied, the scenario given in this concern is realistic. Therefore a small, limited quantity, eyebath has been installed on the landing between the acid and caustic tanks to provide a means of immediate flushing. This is an enhancement to the previously existing conditions did not result from the ECP evaluations. It was noted in a visit to neighboring utilities that small units were used to provide remedial flushing, enabling a person to reach a permanent unit. This fix was determined to have an application at WBN.

WBN-0389 reports the eyewash/shower located at Auxiliary Building, elevation 713 column A3&T is blocked by seismic supports which have been added. Inspection of this area revealed the view of the eyewash was blocked but not access to the device.

The specific device in question was installed during a period when tool decontamination was to be done in the room directly across the aisle from column A3&T. This room is now used for Radiochemistry Laboratory and Health Physics storage. The eyewash/shower is no longer needed at this location.

A medical emergency drill conducted during 1985 in this area utilized a "foreign material in eyes" scenario which required the Emergency Medical Response Team (EMRT) to utilize the eyewash. This was accomplished without difficulty. The concern is not substantiated.

WBN-0043 states there is no eyewash station at elevation 692 Auxiliary Building column A7&W instrument panels. These panels contain instrument lines that contain borated water. At the time of this concern the eyewash/shower closest to the panels was blocked by a scaffold. There is no requirement to provide a fixed eyewash/shower at each pump, valve, or instrument panel where a spray might occur. Where a risk is perceived through prejob planning portable eyewash units are readily available through the Safety Office. The physical inspection of this area revealed the eyewash/shower on elevation 692 was no longer blocked by scaffolding. This concern may have been valid at the time it was identified; however, a walkdown of the area did not substantiate the reported conditions.

EAC-5-002 a Sequoyah concern contends the eyewash stations near the battery charging area of each diesel room would be inoperative during periods of potable water outages. The same condition exists for Watts Bar though the majority of the eyewash/shower units are on the demineralized water system. This concern is valid; however, temporary portable units are available during these outages.

WLW-85-001 a Sequoyah concern regarding the number of eyewash/showers in the new water treatment plant. A physical inspection of Watts Bar's new facility revealed an eyewash/shower on each elevation and outside at the truck connection points, all within the recommended travel distance of 100 feet. This concern is not substantiated at WBN.

The Industrial Safety Section Supervisor for SQN indicated the number and location of eyewash and shower units at their water treatment plant meets or exceeds ANSI Z-358.1-1981 recommendations.

2.5 Medical Response, is composed of seven concerns which allege response by the EMRT is slow, treatment afforded the victim is incompetent, and time required to remove an injured person is excessive.

An evaluation of the requirements and criteria for medical facilities as found in OSHA 29 CFR 1910.151 indicated the site is obligated to provide medical supplies, have medical personnel available for consultation, and have an unspecified number of persons trained to provide first aid.

An evaluation of the "response time" was accomplished by reviewing EMRT drill critiques and Public Safety logs of actual emergency responses. Public Safety logs are maintained for only six months, then destroyed. Information on specific medical emergency responses, if older than six months, is based on memory of the responders.

Based on these reviews and this evaluator's participation in actual drills the following is a concern-by-concern evaluation:

IN-86-311-005 alleges a "heat stroke" victim in the unit 2 Reactor Building annulus required two hours to remove. No record of an individual suffering "heat stroke," "heat stress," or "heat prostration" could be found in the site's medical records for 1985. An incident requiring approximately one hour for removal in unit 2 lower containment occurred in the same time frame as this allegation. It involved a fall from a scaffold and a spinal injury was possible. The EMRT determined no life threatening injuries existed, and took the necessary time to "package" and transport the individual with extra care.

This concern is not substantiated.

IN-85-248-002 and IN-85-737-001 allege "TVA Medical" does not respond in a timely manner. MED SVS personnel are to respond to all medical emergencies but they are not the "first responders." The EMRT, which is the first responder, has responded to the vast majority of actual medical emergencies and drills within four minutes. Longer response times have occurred infrequently for a variety of reasons. There is no criterion for how quick a response should be. Subjectively, the EMRT drill evaluators feel any response within four minutes is acceptable. This concern is not substantiated.

IN-85-605-001 also alleges slow response to a medical emergency. While the specifics of this particular event could not be verified, it is known that miscommunications regarding victim locations led to some response delays during the period of time when medical response was transferred from DNC to the plant.

IN-85-370-001 contends there is an inability to promptly evacuate persons from the Auxiliary Building, elevation 737 and the Raceway of Reactor Building No. 2 elevation 702. The concern cites a medical emergency in the unit 2 Raceway in May 1985.

Evacuation from unit 2 side of the Auxiliary Building, elevation 737 to unit 1 side can be accomplished through any of three gates in the interface fence, one of which opens at the elevator. The lower containment and raceway areas of unit 2 Reactor Building are congested areas making the movement of men and materials difficult. Additionally, there are only two means of evacuating an injured employee: to elevation 716 by way of a ship's ladder and to elevation 757 by way of the equipment hatch hoist. If a person is able to walk, the ship's ladder is the preferred exit. Nonambulatory injuries must be hoisted up the equipment hatch in a Stokes basket. This requires proper rigging, a rider to accompany the victim, and a crane operator to make the lift. The case in question involved such a situation. Though there was a delay necessitated by a need to coordinate the activities to make a safe lift, the victim was stabilized and had no life threatening injuries.

This concern is not substantiated.

IN-85-372-002 alleges EMRT response is "poor" and cited an injured "fitter" on Auxiliary Building, elevation 713 was not attended to "promptly." Evaluation of this concern revealed a delay in response may have occurred due to the insufficient information provided by the caller. This caused the EMRT to search for the victim rather than respond directly to the scene. Records for a medical emergency as described could not be found.

While this particular concern is substantiated it does not indicate a failing of the EMRT.

IN-86-277-002 alleges medical treatment is delayed because Public Safety does not know of the plant well. This may have occurred but could not be substantiated. The Operations ASE who is assigned as Fire Brigade Leader for the shift, and four operations AUOs, all of whom know the plant well, are assigned the responsibility as first responders. Normally there is one Public Safety EMT assigned to the team. Drill critiques indicate public safety personnel are often the first responders.

IN-85-372-002 and IN-86-277-002 also allege instances of "mistreatment." Discussions with DNC Medical Services revealed at least one instance where there was indecision as to who would transport the injured person, or whether the injuries were sufficient to warrant an outside medical examination. The question of which ambulance will transport a victim to an outside medical facility has been addressed. The responding unit will transport off-site if necessary. No pattern of mistreatment or incompetence could be identified. These concerns are not substantiated.

While "Medical Response" as an issue is not substantiated, there have been several suggestions through the WBN Safety Suggestion Program to enhance the EMRT response that have been accepted or are under review. These include the following:

- Include in plant familiarization portion of General Employee Training (GET), a plan of the Power House buildings, and the column numbering scheme,
- Require a critique of all EMRT responses, and maintain these in the safety section records,
- Place large "unique identifier" numbers on each phone to correspond to the plant location for a more certain location of the emergency call, and
- Provide the EMRT members with instruction on rigging and rescue from difficult locations, e.g., sumps, tanks, towers, and heights.

2.6 Annulus Work, contains six concerns. Two of the concerns contend more phones are needed, one contends no procedure for annulus entry and work exists, and one contends the Reactor Building annulus is designed so compactly that rescue would be "impossible."

The concerns which comprise this issue make several valid statements, i.e., more phones would assist in making emergency notification, and the Reactor Building annulus is a compactly designed area.

An interview with plant Electrical Maintenance personnel provided the number and location of annulus phones in both unit 1 and unit 2 Reactor Buildings. Print 55 N1300-3 R16 was also provided. A walkdown of both units revealed the print to be accurate.

A review of plant Hazard Control Instructions revealed HCI-G8a "Working in Concealed Areas" specifically identifies the annulus as a concealed area and provides guidance for such entries.

IN-85-274-002 contends there are only two phones in the annulus. A walkdown of print 55 N1300-3 R16 revealed four phones have been installed in Reactor Building No. 1 annulus and five are installed in the unit 2 annulus. This concern may have been valid at the time it was expressed; however, present conditions do not reflect the conditions reported. Phones were installed by issuance of Field Change Request (FCR) 1172 issued February 27, 1986.

IN-85-605-004 states there are two phones per floor, and that safety could be enhanced by additional phones. While the number of phones reported to be in the annulus is not accurate in the concern, the contention that additional phones would enhance safety is valid as this would speed notification of an emergency.

IN-86-007-001 contends no procedure exists for the emergency removal of injured/ill persons from the annulus. Hazard Control Instruction HCI-G8a "Working in Concealed Areas" requires planning on the part of supervision and employees for emergency conditions. This concern is not valid for plant personnel; however, DNC has no procedure for "working in concealed areas," and is not provided with hazard control instructions.

EX-85-154-002 states the Reactor Buildings are designed so compactly that an injured worker could not be removed - especially from the annulus area.

IN-85-746-001 is a concern shared with subcategory report 90700 which deals with access and design considerations. Though this concern does not specifically deal with "annulus work", the question of the plant's ability to rescue a worker from a difficult to reach location is the same.

Access into and egress from the annulus is recognized to be difficult. The statement regarding the compact nature of the annulus is accurate. While it would be "extremely difficult," the EMRT is equipped with special equipment which would enable them to extracate a nonambulatory person from the annulus. This concern is not substantiated as written, but the compactness of the annulus as a safety issue and is addressed below.

EMRT drills in the annulus and lower containment have been specifically avoided for fear of injuring personnel in such a training exercise.It was also found through informal interviews with plant and DNC craftsmen and supervisors that few persons onsite are aware of HCI-G8a, Working in Concealed Areas," which specifically addresses annulus entry.

IN-86-203-001 contends the EMRT should be composed of paramedics specifically equipped and trained to respond to plant emergencies. Both drills and training for EMRT members is proposed by this report. A "dedicated fire brigade" which would also respond to medical emergencies as proposed in this concern has been taken under advisement by plant management.

The plant Industrial Safety Section has taken the following additional actions to enhance the safety of workers in the Reactor Building annulus:

- Signs on the floors with phones are to be posted at the ladderway indicating the direction to the phone.
- A special extrication device known as a "half-back" has been purchased to aid in removing persons either up or down ladders. Training in its use is planned.
- Training for EMRT members in difficult rescue situations is being sought by the plant Safety Staff.

None of these actions were initiated as a result of this evaluation. This report proposes as a corrective action "realistic EMRT drills" be conducted in the annulus as well as other plant areas where access/egress is difficult to assure the plant is able to extricate nonambulatory injury cases.

2.7 Ambulance Equipment, contains a single concern IN-86-111-003 which alleges that the stretchers in the DNC and Plant ambulances are not interchangeable. This is a substantiated concern. Both stretchers were manufactured by the same company; however, the locking mechanisms were different. The locking mechanism permits the stretcher to be immobilized for transport.

This concern was corrected when the plant ambulance and stretcher was modified to be interchangeable with DNC stretchers. This modification was accomplished through the established "Maintenance Request" process when it was reported.

2.8 Inadequate Site Drills and Evacuation Plans, contains two concerns. One, IN-86-104-001, contends a complete evacuation of the site is "required" to test the adequacy of site evacuation plans. Concern PH-85-021-001 questions the site plans for evacuation of handicapped individuals.

The requirements for a plan to evacuate the site in the event of a radiological emergency were reviewed and discussed with the Site Emergency Coordinator. Provisions for handicapped employees were discussed with the affected section supervisor and the actual employees involved. A physical inspection of handicapped access/egress provisions was conducted.

Neither concern is substantiated. As required, a radiological emergency plan (REP) for the site has been submitted and approved by the NRC. This plan includes provisions for site evacuation. A complete site evacuation drill is not required. Provisions for access/egress for the two handicapped employees working at the plant were found to be adequate. Both employees drive their own vehicles. Neither employee had difficulties exiting the site.

Evaluation of this issue revealed many individuals are not familiar with the site's plan to respond to radiological emergencies (REPs).

2.9 Subcategory Summary

The individual concerns addressed by this subcategory report are grouped to answer questions relating to eight distinct issues regarding emergency equipment, and plant response to emergencies.

In the majority of instances neither the individual concerns nor the larger "issue" could be substantiated when compared against existing criteria. In many instances no criteria or standards exist to provide guidance as to what is acceptable, e.g., no criteria exist for the placement of phones, no criteria exist for the compatibility of ambulance equipment, and no criteria exists for how "quick" a medical response should be. In other instances it was noted that plant equipment and procedures exceed the requirements of standards, e.g., composition and training of the EMRT, Fire Fighting Equipment, and placement of 5-minute escape air-packs.

No corrective action items were generated as a result of a failure to comply with established standards or criteria. Several action items were generated as "enhancements" to the existing program where the evaluation indicated an improvement was possible.

- Provide instructions for the use of Emergency Life Support Apparatus (ELSA) in Plant Hazard Control Instructions (HCI).
- Mark plant phones with a "unique identifier" number to speed response by eliminating confusion over location of emergency.
- Provide additional training to EMRT Members in rescue from difficult locations.
- Update Plant Hazard Control Instructions to include use of portable eyewash where necessary.
- Provide a written record of actual medical emergency responses performed by the EMRT to use as a basis for identifying weaknesses in the program.

- Provide the sections or groups assigned work in the annulus and other concealed spaces with the guidelines of safely performing this work as found in HCI-G8a, Working in Concealed Spaces.

While the number of substantiated concerns identified by this evaluation was very few, it was found that employees were not knowledgable or were misinformed as to the actual emergency preparedness level of the plant. This has led to a perception of a hazard and the voicing of a concern by the individuals.

3.0 EVALUATION PROCESS

3.1 A similar evaluation process was followed for each element in this subcategory. This normally involved the following steps: review of case files including reports and studies conducted on the employee concerns within this subcategory during the previous evaluation program, review of requirements and criteria governing the activity, interviews with knowledgeable individuals concerning the individual concerns or the element subject, and a physical evaluation of the condition where necessary.

The following is an issue by issue breakdown of the evaluation process:

3.1.1 Fire Fighting Equipment

3.1.1.1 Previous evaluation findings for concerns IN-85-996-003 and IN-88-322-001 were reviewed.

3.1.1.2 The following standards, criteria, and documentation were found to be significant to this evaluation:

- National Fire Protection Association, National Fire Codes, NFPA-10, "Portable Fire Extinguishers," Table 3-2.1.

  This allows a 75 foot maximum travel distance for a building of "Moderate" hazard rating less than 1500 square feet in area.

- Title 29, Code of Federal Regulations, Part 1926, Subpart C, Article 24 (29 CFR 1926.24).

  The employer shall be responsible for the development and maintenance of an effective fire protection and prevention program at the job site throughout all phases of the construction,

repair, alteration, or demolition work. The employer shall ensure the availability of the fire protection and suppression equipment required by Subpart F of this part.

- Title 29, Code of Federal Regulations, Part 1926, Subpart F, Article 150 (29 CFR 1926.150(c)(1)(i).

  A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the protected building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.

  The above mentioned standards are for the construction industry required by the OHSA.

- Memorandum dated March 14, 1985 from W. F. Hawkins and J. W. Craven to J. J. Loud, "Fire Report Investigation."

A review of the OHSA Standards for General Industry (29 CFR 1910) indicates the following:

- Title 29, Code of Federal Regulations, Part 1910, Subpart L, Article 157 "Portable Fire Extinguishers" paragraph (D) "Selection and Distribution" subparagraph (1) which states:

  Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.

3.1.1.3 The following knowledgeable persons were interviewed:

Plant - SD-3 Fire Marshall
DNC Public Safety/Firefighter Lt.
Plant - SC-4 Fire Protection Engineer

3.1.1.4 A physical inspection of the conditions cited in the concerns was not possible since neither the abrasive blasting and paint shop nor the firetruck in question are on this site.

3.1.2 Self-Contained Breathing Apparatus

3.1.2.1 The previous evaluation findings for the following concerns were reviewed for additional information:

IN-85-319-002
WBN-0293
IN-85-938-002
WBN-0064
RMM-85-003

3.1.2.2 The following standards and criteria were found to be significant to this elevation:

Title 29, Code of Federal Regulations, Part 1910, Subpart I, Article 134 (29 CFR 1910, 134) "Respiratory Protection"

Paragraph e, Subparagraphs 4 and 5 state:

(4) Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned, and maintained.

(5) For safe use of any respirator, it is essential that the user be properly instructed in its selection, use, and maintenance. Both supervisors and workers shall be instructed by competent persons. Training shall provide the men an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.

(i) Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when condi.ions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in

observing these factors shall be evaluated by periodic check. To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator. This may be done by following the manufacturer's facepiece fitting instructions.

Additionally, the following plant instructions provide guidance to the users of SCBA respirators:

- Administrative Instruction AI-10.1 "Plant Training Program" BAT-1 "Breathing Apparatus Training." This instruction provides that users of SCBAs shall receive the following training:

  Approximately two and one half hours of instruction on the safe use of SCBAs including use of communications equipment, donning, and fit-testing.

- Hazard Control Instruction HCI-G8, "Working in Confined Spaces," provides guidance for when SCBAs might be used, e.g., possible oxygen deficient atmospheres where constant monitoring is not used.

- Hazard Control Instruction HCI-PPE10, "Use of Robert-Shaw 5-Minute Escape Packs," provides information to potential users on donning and use of the escape device.

- National Fire Protection Association, National Fire Codes, NFPA-101 "Life Safety Code." In regard to under stair storage, the following applies: there is to be no enclosed usable space under stairs which could impede egress.

3.1.2.3 The following individuals were contacted concerning this element:

Plant-Industrial Safety/Fire Protection/Loss Control Supervisor M-5
Plant - SD-3 Fire Marshall
Plant - SC-4 Fire Protection Engineer

3.1.2.4 A physical inspection of all areas currently provided with SCBAs and/or escape air packs was conducted. This includes:

Plant Firetruck
Diesel Generator Building
Potable Water Building
Control Building Fire Cage
Service Building Fire Cage
Service Building Machine Shop Area
CO_2 Yard Vault
Control Room
Technical Support Center
Central Alarm Station
Communications Room

3.1.3 Emergency Lighting

3.1.3.1 IN-85-168-002 was reviewed. A previous response to IN-85-319-004 which questioned the lack of emergency lighting was also utilized.

3.1.3.2 The following criteria were found to apply:

National Fire Protection Association

National Fire Codes, NFPA-101 "Life Safety Code" Section 5-9 "Emergency Lighting."

TVA Occupational Health & Safety Manual-Design Requirements

Design Change Request (DCR) 330

Engineering Change Notice (ECN) 3161

Workplace Hazard Assessment Worksheet 2-83

3.1.3.3 The following individual was interviewed:

Plant-M-5 Industrial Safety/Fire Protection/Loss Control Supervisor.

3.1.3.4 A walkdown of the stairwells in the Turbine Building was conducted.

3.1.4 Emergency Eyewash/Showers

3.1.4.1 The previous evaluation findings for the following concerns were reviewed for additional information:

IN-85-115-003
WBN-0389
WBN-0043
EAC-5-002
WLW-85-001

3.1.4.2 The following standards, criteria, and plant procedures were reviewed and found to contain pertinent information regarding this element:

- Title 29, CFR Part 1910, Subpart K, Article 151 Subparagraph C (29CFR 1910.151[C]). It states:

  Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

- American National Standards Institute ANSI Z358.1-1981 "Standard for Emergency Eyewash and Shower Equipment." Sections 5.5.4 and E5.5.4 state:

  Eyewash units shall be in accessible locations that require no more than 10 seconds to reach and should be within a travel distance no greater than 30.5 meters (100 feet) from the hazard."

  The unit should be located as close to the hazard as possible, and on the same level. The maximum time required to reach the eyewash should be determined by the potential effect of the chemical. For a strong acid or strong caustic, the eyewash should be immediately adjacent to or within 3 meters (10 feet) of the hazard. It is recommended that the consulting physician be contacted for advice on the proper distance.

The following plant instructions were also reviewed:

- Watts Bar Nuclear Plant, Hazard Control Instructions:

  HCI-HM3 "Sulfuric Acid and Caustic Solution - Bulk Transfer (June 23, 1986) states":

  > The emergency shower and eyewash shall be tested by Operations personnel before the start of transfer operations.

  HCI-HM9 "Hazardous Chemicals (June 24, 1985)" states:

  > Emergency showers and eyewash fountains shall be located in the area where work involving hazardous chemicals is to be done and shall be checked before the operation begins. In the event a permanent shower or eyewash fountain is not available a portable shower shall be provided."

  HCI-HM16 "Handling of Liquid and Chemical Spills"
  HCI-HM3 "Transfer of Hydrazine"
  HCI-HM4 "Filling of Hydrazine Storage Tank (April 30, 1985)"
  HCI-HM5 "Filling of Ammonia Storage Tank (April 30, 1985)," states:

  > Ensure that the safety shower is in proper working order.

3.1.4.3 The following individual was contacted regarding this element:

Plant-SX4-Industrial Safety Specialist

3.1.4.4 A physical walkdown and evaluation of the eyewash/shower facilities in the following areas was conducted:

Acid & Caustic Building
Diesel Generator Building
Auxiliary Building Elevation 692 Col. A7&V-W
Water Treatment Plant (New)
Auxiliary Building Elevation 713 Col. A3&T

3.1.5 Medical Response to Emergencies

3.1.5.1 A review of the following was conducted to evaluate previous responses:

IN-86-311-005
IN-85-248-002
IN-85-372-002
IN-86-277-002
IN-85-370-001
IN-85-737-001
IN-85-605-001

3.1.5.2 The following standards, criteria, and procedures were found to contain pertinent information on this element:

- Title 29, Code of Federal Regulations Part 1910, Subpart K (29CFR 1910.151) "Medical Service and First Aid."

  The minimum, criteria for an acceptable first aid/medical program are as follows:

  The employer shall ensure the ready availability of medical personnel for advice and consultation on matters of plant health.

  In the absence of an infirmary, clinic, or hospital in near proximity to the workplace which is used for the treatment of all injured employees, a person or persons shall be adequately trained to render first aid. First aid supplies approved by the consulting physician shall be readily available.

- EMRT critique sheets from various drills (1984-1986) reveal response time are normally less than four minutes (20 to 23 total drills).

- AI-10.1 "Plant Training Program" emergency medical response team members receive the following minimum training: FAT-1 (first aid and CPR) and BAT-1 (breathing apparatus).

  This standard practice requires the safety section to schedule and conduct drills annually and also mandates certain training for EMRT members including: FAT-1 and BAT-1.

- WB9.34 "Emergency Medical Response Team"

  The possible role of the EMRT in radiological emergencies is also found in the Watts Bar Radiological Emergency Plan (REP) Implementing Procedures Document (IPD) No. 10.

3.1.5.3 The following individuals were contacted regarding their knowledge of this topic:

WBN-Site Emergency Coordinator
Plant/MED SVS Occupational Nurse Practitioner
DNC/MED SVS Nurse
Public Safety Service Personnel as follows:
Plant PSS Chief
Plant PSS Captains (2)
Plant PSS Lieutenants (2)

3.1.5.4 Observations were made by this evaluator on both EMRT drills and on responses to actual medical emergencies.

3.1.6 Annulus Work

3.1.6.1 The following were reviewed for previous responses:

IN-85-274-002
IN-85-605-004
IN-86-007-001
EX-85-154-002
IN-85-746-001
IN-86-203-001

3.1.6.2 The following standards, criteria, and procedures were reviewed for significance in this evaluation:

Watts Bar Nuclear Plant, Hazard Control Instruction. HCI-G8a, "Working in Concealed Areas."

This instruction specifically identifies the annulus as a "concealed area" and requires the following precautions:

1. Utilize the "Buddy System" where ever possible.

2. Preplan each job with both craft and supervision to identify and eliminate hazards. All necessary emergency equipment and communications equipment is to be provided.

3. Establish provisions for periodic communications.

4. Establish a "check in" time. If this time is exceeded the EMRT will be summoned.

3.1.6.3 The following individuals were interviewed regarding their knowledge on this element:

Plant Electrical Maintenance-Engineering Aide, SE-4
PSS, Shift Captains (2)

Informal interviews with an estimated 15 plant and DNC workers in the annulus

3.1.6.4 A physical walkdown of both Reactor Building annulus areas was conducted.

3.1.7 Ambulance Equipment

3.1.7.1 Concern IN-86-111-003 was reviewed and the previous response consulted.

3.1.7.2 No standards or criteria apply.

3.1.7.3 The following individuals were consulted:

MED SVS Central Office Personnel
Transportation Service Branch-Purchasing Personnel
Plant/Med SVS Occupational Nurse Practitioner
DNC/Med SVS-Nurse
PSS Officers (3)

3.1.7.4 An inspection of both the DNC and Plant ambulances was conducted.

3.1.8 Inadequate Site Drills and Evacuation Plans

3.1.8.1 Previous responses for the following concerns were reviewed:

IN-86-104-001
PH-85-021-001

3.1.8.2 The following documentation was found to be essential to the formulation of this evaluation:

TVA Occupational Health and Safety Program Manual - "Design Requirements Minimum Guidelines and Requirements for Accessible Design, 36 CFR 1190, shall be applied to accommodate handicapped persons in facilities that are subject to public access or may result in the employment therein of physically handicapped persons."

State of Tennessee's Multi-Jurisdictional Radiological Response Plan for Watts Bar TVA Radiological Emergency Plan (REP) for Watts Bar Plant-Public Safety Service-Section Instruction Letter SIL 22.0

3.1.8.3 The following persons were consulted regarding their knowledge of this topic:

WBN Site Emergency Coordinator
Plant/PSS-Chief
Plant/PSS-Shift Captains (2)
DNC-Safety Engineer, SD-4
DNC Document Control Supervisor, M-6
DNC Document Control Employees (2)

3.1.8.4 Physical inspections of the areas occupied by handicapped employees were conducted.

4.0 FINDINGS

Discussion:

Although the issues addressed by this subcategory may have minor implications at other sites, because of the specific nature of the issues the findings and conclusions are considered to be site-specific to WBN.

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.

The subcategory of "Emergency Equipment and Plant Response to Emergencies" contains eight distinct issues which cover fixed equipment, mobile equipment, and plant procedures to deal with emergencies. As a group, the plants ability to cope with emergencies which might arise because of normal maintenance activities, or those which develop because of a fire or radioactive release is questioned.

Findings/Conclusions:

As a subcategory, the allegation that the plant has neither the equipment, nor the procedures to respond to a variety of emergencies is not substantiated. This does not indicate that all individual concerns evaluated were not substantiated, nor that each element was found not valid. A finding during the course of this evaluation was a significant "lack of knowledge" on the part of plant personnel regarding the equipment and procedures available to minimize the impact of emergencies.

The following is a brief issue-by-issue discussion of the major element topic and the findings/conclusions as a result of the evaluation.

4.1 Fire Fighting Equipment

4.1.1 Discussion: This issue contended fire-fighting equipment was not available where needed nor properly maintained. Neither of the two concerns in this element was found to be valid.

4.1.2 Findings/Conclusions: WBN employees do not know well enough the requirements for type and location of fire extinguishers. No fires had occurred at any time in the small abrasive blasting and paint shop and the DNC firetruck had arrived to back up the plant firetruck fire with a full tank of water.

4.2 Self-Contained Breathing Apparatus

4.2.1 Discussion: This issue contends SCBAs should be available for plant use by locating the units throughout the plant. A secondary issue involves the location and use of the 5-minute escape air packs. The concern is expressed in the form of a suggestion. Added to this element were several safety suggestions received through the sites Employee Concerns Program. This issue contains both valid and invalid concerns.

4.2.2 Findings/Conclusions: Self contained breathing apparatus are not intended for use by untrained employees. In fact, the OSHA standards for respirator use (29 CFR 1910.134) require users of such respirators to be trained and fit-tested. SCBA units are located in many areas of the plant for emergency use by trained personnel. Under-stair storage as recommended violates the NFPA-101 "Life Safety Code." These concerns are not valid.

Valid recommendations regarding placing SCBAs in the central alarm station (CAS) and an additional 5-minute escape pack in the CO_2 yard vault were acted upon.

4.3 Emergency Lighting

4.3.1 Generic: TVA committed to comply with NFPA-101 "Life Safety Code" in 1983. Buildings designed and constructed before that year have been reviewed for compliance.

4.3.2 Discussion: This concern contends emergency lighting which is required in the Turbine Building stairwells has not been installed. There is no question the emergency lighting is needed and required in accordance with NFPA-101 "Life Safety Code".

4.3.3 Findings/Conclusions: Emergency lighting is to be installed in a variety of plant locations including the Turbine Building per ECN 3161. A completion date of October 1, 1987 is projected. The process to accomplish any change in the plant from identification of desired change, to hazard assessment, to Design Change Request, to Engineering Change Notice to actual work is lengthy and is not common knowledge. Employees are not generally aware of previously submitted DCRs, or their status. This issue is not valid.

4.4 Emergency Eyewash and Shower

4.4.1 Discussion: This issue originally contained one concern regarding the travel distance to the eyewash/shower at the Acid and Caustic Building. Three additional concerns were added through the sites Employees Concerns Program (ECP). Two concerns address the location of eyewash/shower facilities in the Auxiliary Building and one the facilities in the new water treatment plant.

4.4.2 Findings/Conclusions: The eyewash/shower at the Acid and Caustic Building was found to be acceptably located if the 100 foot travel distance according to ANSI Z358.1-1981 criteria is applied, and if the assumption that the greatest risk of a chemical spray is during transfer operation is valid. "Common sense" indicates the original concern is nevertheless substantiated. A person blinded by a chemical spray while inside the building would have difficulty reaching the sole eyewash/shower outside. As a result of safety section personnel observations of Duke Power and Georgia Power abatement of similar hazards, a small limited quantity eyebath unit was installed inside the building. Two concerns relating to eyewash facilities in the Auxiliary Building were found not valid. A functional, but unnecessary, unit at elevation 713, A3&T is accessible and a permanent unit at A7&V-W on elevation 692 is not required as chemicals are neither used nor transferred at this instrument panel.

Portable eyewash facilities are available for such exposures. Adequate eyewash/showers according to ANSI Z398.1-1981 criteria are available at the new water treatment facility. A review of hazard control instructions for all chemicals revealed the need for emergency eyewash/shower is not always listed in the precautions.

4.5 Response to Medical Emergencies

4.5.1 Discussion: This issue contains concerns about the conduct of the EMRT, its response to emergencies, and the competence of the treatment provided. Individually, the concerns allege instances of slow response, mistreatment of the injured, and slow removal of injured employees.

4.5.2 Findings/Conclusions: During the course of the evaluation of this element it was determined several misleading allegations were made including the following: There is no record or recollection of "heat stroke" ever occurring at Watts Bar, no victim removal activities have exceeded 45 minutes according to records kept by Public Safety Services. That responses are sometimes delayed is substantiated. No instances of incompetent treatment are known.

Interviews with a number of DNC craftsmen indicated what appears to be several misconceptions regarding the function of the EMRT in medical emergencies. What was not understood included the following:

1. The EMRT is composed of trained plant personnel, and is supported by Public Safety and Medical Services Personnel. The Public Safety and Medical Services Personnel may not arrive until several minutes into the emergency. The plant nurse may choose not to report to the scene. Based on the injury it may be beneficial to remain at the Health Station. This is a change from the former DNC response where a Public Safety-EMT and a nurse responded exclusively to all medical emergencies.

2. The ambulance may not be utilized on all medical emergencies contrary to the former DNC procedure.

3. Speed in removing an injured employee, unless life-threatening injuries are involved, is usually not advisable. What is perceived as a lack of speed is usually the result of extra care for the injured.

The majority of the concerns found in this element originate from the Construction personnel and appear to indicate a lack of understanding of the role and function of the EMRT. The issues raised by these concerns were not valid.

4.6 Annulus Work

4.6.1 Discussion: This issue contains concerns which allege work in the annulus area of the Reactor Buildings is unnecessarily hazardous because of restrictions in the access/egress path, a lack of communications, and a lack of procedures for such work. As a result of these conditions, emergency response will be impeded.

4.6.2 Findings/Conclusions: An inspection of both unit 1 and unit 2 annulus areas revealed four phones in RB-1 and five phones in RB-2 rather than the two reported to be in each. However, these phones are not readily obvious and could be overlooked easily. The issue of an inadequate number of phones is not valid.

Hazard Control Instruction HCI-G8a, "Working in Concealed Areas," specifically addresses the precautions necessary for working in the annulus and other concealed areas. Most employees questioned about the procedures governing entry into the annulus stated they knew of none. DNC employees do not have access to plant Hazard Control Instructions. The issue of no procedures for annulus work is not valid.

The annulus, as well as other areas of the Reactor Building, is a congested area where rescue would be difficult. However, the EMRT is equipped to remove an injured employee in such locations. The issue of rescue from the annulus being "impossible" is not believed to be valid. The expected difficulty of rescue for concealed areas has prompted a request for a corrective action.

4.7 Ambulance

4.7.1 Generic: A discussion with BFN, and SQN Industrial Safety personnel revealed the condition found at WBN was unique to this site.

4.7.2 Discussion: This issue involves the failure of Plant and DNC ambulance stretchers to be interchangeable. The locking mechanism for the DNC stretchers operate in the "up" position. The plant stretcher locked in the "down" position.

4.7.3 Findings/Conclusions: Once discovered and reported the plant stretcher was modified to be consistent with the DNC equipment. This condition was accurately reported in the employee concern, and has been corrected. No evaluation for possible incompatibility with other similar equipment was performed before purchase. The concern was valid and was corrected.

4.8 Inadequate Site Drills and Evacuation Plans

4.8.1 Discussion: The concerns which compromise this element state a site evacuation is "required" to test the ability of the site to evacuate all personnel in the event of a radiological emergency, and ask what provisions have been made for the evacuation of handicapped individuals.

4.8.2 Findings/Conclusions: A plan for the site in the event of a radiological emergency is a licensing requirement of the NRC. Watts Bar's Radiological Emergency Plan (REP) has been approved. The Implementing Procedures Document (IPD) does not "require" an actual evacuation. This concern was not valid.

No special evacuation plans for handicapped employees exist or are believed to be necessary. This concern was also found not to be valid.

5.0 COLLECTIVE SIGNIFICANCE

Management Effectiveness

Management has not been effective in informing supervisors, foremen, and employees about the existence of safety policies, procedures, work practices and instructions in place at WBN, and about the use and capabilities of various emergency equipment available on site. This lack of knowledge increases the possibility for accidents and injuries.

6.0 CAUSES

Causes of the negative findings are listed in this section. For many of the concerns expressed in this subcategory there is a "perception" of a problem on the part of the employee which has been identified and addressed by management. Management's corrective actions have in many cases not been communicated to the employee level creating the appearance that no corrective actions have been initiated, or that no procedures exist to safely work with the condition.

6.1 "Emergency Lighting"

6.1.1 Site-Specific: Watts Bar

The Turbine Building which was designed and constructed before the 1983 agency commitment to NFPA 101 "Life Safety Code" is in violation of this requirement.

6.2 "Emergency Eyewash/Showers"

6.2.1 Site-Specific: Watts Bar

Site procedures requiring the availability of emergency eyewash/shower are not communicated or consulted before performing work. In some procedures where a safety eyewash/shower is needed, this reference was omitted.

6.3 "Annulus Work"

6.3.1 Site-Specific: Watts Bar

Employees have not been informed in a number of cases as to the recommended precautions when working in the annulus.

6.4 "Ambulance Equipment"

6.4.1 Generic: Criteria for emergency medical equipment to be used on TVA sites do not exist.

6.4.2 Site-Specific: Watts Bar

The possibility of exchanging equipment between two ambulances was not considered when Medical Services purchased the last of three ambulances onsite.

7.0 CORRECTIVE ACTIONS

No immediate corrective actions or stop-work orders were initiated as a direct result of this subcategory evaluation. No outstanding corrective actions exist as a result of any prior investigation of the employee concerns addressed by this subcategory report.

Corrective actions already taken by the plant were performed through the normal Maintenance Request procedure at the time of initial notification through the existing Safety Suggestion Program. These actions are not listed in this section.

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

A. 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 various line management subcommittees to the CSC. CATD 90100-3, 7, 11 and 15 establish a safety audit program. One of the principal purposes of the CSC will be to communicate and to improve the enforcement of the industrial safety program by all line managers to the employees.

B. Subcategory Report 90500, Life Safety

CATD 90500-1 establishes a periodic safety bulletin to all employees to inform them of site procedures, instructions, and work practices involving work in confined or hazardous plant areas.

The following is a listing of the problem areas identified as a result of this subcategory investigation. For each problem description there is a CATD number and a Corrective Action Plan.

7.1 Site Specific Actions - Watts Bar

7.1.1 CATD No. 90800-1 Problem Description: Five Minute Escape Packs located in selected plant areas are of two varieties, Robertshaw and E.L.S.A. (Emergency Life Support Apparatus). HCI-PPE10 provides instruction for the use of the Robertshaw device. No instructions are available for the use of the E.L.S.A. units.

Corrective Action Plan: Hazard Control Instruction-PPE10, Robertshaw 5-Minute Air Capsule, will be revised before March 1, 1987 to include information on the availability of training and use of the Emergency Life Support Apparatus (E.L.S.A.) and Robertshaw 5-Minute Air Capsule. Safety training classes on both units are given frequently upon request to employee groups and others potentially exposed to oxygen deficient atmospheres. Responsible section - Industrial Safety.

7.1.2 CATD No. 90800-2 Problem Description: Response to medical emergencies has been delayed on occasion by the caller's inability to accurately identify his/her location. A system of "unique identifier" numbers, or an alpha-numeric identifier on each phone keyed to its plant location has been proposed by EMRT members to speed response to medical and fire emergencies.

Corrective Action Plan: An evaluation will be conducted before March 1, 1987 to determine the most practical and appropriate method of posting the location at each phone within the plant to allow the employee using the phone to be able to accurately identify his/her location. Responsible section - Electrical Maintenance.

7.1.3 CATD No. 90800-3 Problem Description: Employees assigned to the EMRT have not been trained in rescue from difficult locations such as the lower containment areas of the Reactor Building, the annulus, accumulator rooms, sumps, or heights. Equipment on hand is "believed to be adequate"--no formal evaluation has been conducted.

Corrective Action Plan: Realistic training and drills involving medical emergencies in difficult to access locations such as the lower containment areas of the Reactor Building, the annulus, accumulator rooms, sumps, and heights, will be scheduled and conducted during the next year. WBN plant received the LSP Half Back close space extrication backboard and harness in July and will evaluate its effectiveness for rescue from these areas during these drills. At least six drills will be conducted by June 1, 1987. All drills will be formally critiqued by an evaluation team with corrective action recommendations listed, forwarded to management, and tracked to completion. Responsible section - Industrial Safety.

7.1.4 CATD No. 90800-4 Problem Description: A review of the plant's Hazard Control Instructions (HCI Manual), hazardous materials sections, reveals a lack of reference to the need for an emergency eyewash/shower in the following instructions: HM-5 Laboratory Safety, HM-6 Chlorine, HM-7 Hydrazine, HM-8 Ammonia, HM-13 Alcohol, and HH-7 Draining of Sodium Hypochlorite Storage Tank.

Corrective Action Plan: Hazard Control Instruction-HM5 Laboratory Safety, HM6 Chlorine Gas System Safety Precautions, HM7 Hydrazine, HM8 Ammonia, HM13 Alcohol (Isopropyl), and HH7 Draining of the Sodium Hypochlorite System Hydroxide Storage Tanks, will be revised prior to March 1, 1987 to reflect the requirement for an emergency eyewash whenever conducting activities related to these HCIs. Responsible section - Industrial Safety.

7.1.5 CATD No. 90800-5 Problem Description: Investigation into the concerns regarding the response of the EMRT was complicated by a lack of records. No format exists for these reports and Public Safety Central-Alarm-Station (CAS) log entries are destroyed every six months.

A record of emergency medical responses should be maintained.

Corrective Action Plan: Watts Bar Standard Practice-9.34, Emergency Medical Response Team, will be revised before January 1, 1987 to include a requirement for a documented evaluation of emergency medical responses. Responsible section - Industrial Safety.

7.1.6 CATD No. 90800-6 Problem Description: DNC employees working inside unit 1 Reactor Building annulus area are not aware of plant Hazard Control Instruction-G8a which classifies this area as a "concealed area" and provides guidance for working safely in these areas.

Corrective Action Plan: The only DNC employees normally authorized to work inside the unit 1 Reactor Building annulus area are Modifications employees. The Modifications Group, although functionally under DNC, works within the framework of the WBN plant safety program, and is therefore subject to the guidance in HCI-G81, Working in Concealed Spaces. Since there have recently been many employees transferred from other sections within DNC to the Modifications Group, a Modifications sectionwide safety meeting prior to January 1, 1987 will discuss HCI-G8a. Responsible section - Industrial Safety.

8.0 EVALUATORS

Charles J. Caudill

9.0 ATTACHMENTS

Attachment A - List of Employee Concern Information

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

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)

EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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
AC-85-002	01	SF	908	N SQN	1 N	N	Y	Y		OECP	TEMPORARY EYEWASHES ARE NOT AVAILABL E IN THE DIESEL GENERATOR BUILDING D URING PERIODS WHEN POTABLE WATER OUT AGES IMPAIR THE PERMANENT EYEWASH/SH OWERS.	1.4, 2.4, 3. 4.4, 6.2, 7.
					2 NA	NA	NO	NO				
					3 NA	NA	B	B				
X -85-154-00201 T50206	SF	908	N WBN		1 N	N	N	Y		QTC	THE REACTOR BUILDINGS ARE DESIGNED S O "COMPACTLY" THAT AN INJURED WORKER COULD NOT BE GOTTEN OUT - ESPECIALL Y FROM THE ANNULUS AREAS. CI HAS NO OTHER INFORMATION. CONSTRUCTION DE PT. CONCERN.	1.6, 2.6, 3. 4.6, 6.3, 7.
					2 NA	NA	NA	NO				
					3 NA	NA	NA	E				
N -85-115-00301 T50074	SF	908	N WBN		1 N	N	N	Y	IN-85-115-003	QTC	EMERGENCY EYE WASH FOR ACID AND CAUS TIC BLDG. IS LOCATED OUTSIDE AND ARO UND CORNER. BLINDED PERSON COULD NO T LOCATE WASH IN ITS PRESENT LOCATIO N. ALSO FLOOR SURFACE BECOMES SLICK (SLIPPERY) WHEN WET. SUGGESTS GRIP TED BEHIND INSTRUMENT SHOP NEAR SWIT CHYARD, COMMON TO BOTH UNITS. NO FU RTHER INFORMATION IS AVAILABLE. FOL LOW-UP REQUIRED.	1.4, 2.4, 3 4.4, 6.2, 7
					2 NA	NA	NA	NO				
					3 NA	NA	NA	D				

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 - 908
N -85-168-00201 T50248	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C		QTC	NO EMERGENCY LIGHTING IN TURBINE BUI LDING STAIRWELLS. EMERGENCY LIGHTIN G FOR STAIRWELLS WAS PUT OFF STATING "THIS WAS NOT COST EFFECTIVE." STA IRWELLS ARE AT VARIOUS ELEVATIONS AN D LOCATIONS THROUGHOUT THE TURBINE B ILABLE IN FILE. NO FOLLOW UP REQUIR ED.	1.3, 2.3, 3. 4.3, 6.1, 7.
N -85-274-00201 T50160	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C	IN-85-274-002	QTC	LACK OF ADEQUATE COMMUNICATION IN TH E ANNULUS OF THE REACTOR. ONLY TWO P HONES ARE AVAILABLE FOR USE IN CASE OF AN EMERGENCY. NUCLEAR POWER CONC ERN. CI WOULD NOT PROVIDE ANY ADDIT IONAL INFORMATION. NO FOLLOWUP REQU	1.6, 2.6, 3. 4.6, 6.3, 7.
N -85-319-00201 T50011	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA E		QTC	SCOTT AIR PACS ARE LOCATED OUTSIDE P OWER BLOCK. THEY ARE NOT AVAILABE (LOCATED PROPERLY) FOR EMERGENCY USE. AIR PACS ARE NEEDED AT KEY POINTS (EG STAIRWELLS) ON EACH ELEVATION	1.2, 2.2, 3. 4.2, 7.0

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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 - 908
N -85-322-00101 T50021	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-322-001	QTC	NEED FIRE EXTINGUISHER IN SMALL BLAST & PAINT SHOP AT HANGER SHOP. SEVERAL SMALL FIRES HAVE OCCURRED THAT REQUIRED THE FIRE TRUCK TO PUT THEM OUT	1.1, 2.1, 3.4.1,
N -85-370-00101 T50023	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-370-001	QTC	AUX BLDG LEVEL 737, 8,9,10 & 11 AND RACEWAY ELEV 702 AUX BLDG UNIT 2, INABILITY TO PROMPTLY EVACUATE AN INJURED EMPLOYEE. CI WITNESSED THE CONFUSION AND TIME DELAY IN ATTEMPTING TO EVACUATE AN INJURED EMPLOYEE IN MA	1.5, 2.5, 3.4.5
N -85-372-00201 T50013	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B	IN-85-372-002	QTC	EMERGENCY MEDICAL RESPONSE IS POOR: E.G. FITTER INJURED ON 713' EL WAS NOT ATTENDED TO PROMPTLY, AND WAS MADE TO WAIT FOR MEDICAL SUPPORT AT 3 POINTS IN THE TRIP TO THE HOSPITAL. THE VICTIM WAS NEEDLESSLY MOVED FROM TO THE AMBULANCE - MEDICAL STAFF COULD HAVE COME TO THE AMBULANCE (MIDDLE OF 1985)	1.5, 2.5, 3.4.5

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
TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ NB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 908
N -85-605-00101 T50098	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-605-001	QTC	SLOW RESPONSE TIME OF MEDICAL EMERGENCY TEAM IN GETTING INJURED EMPLOYEE OUT OF THE PLANT. CI FURNISHED TWO EXAMPLES OF ACCIDENTS TO PROVIDE THIS POINT. ONE CONSTRUCTION WORKER FELL & SPRAINED HIS ANKLE IN CONTAINM ARRIVED ABOUT ONE HOUR LATER AND TOOK THE PERSON IN AMBULANCE. IN ANOTHER INJURY, ABOUT 1 1/2 YEARS AGO, THE MEDICAL TEAM COULD NOT EVEN LOCATE THE INJURED PERSON. CI HAS NO FURTHER INFORMATION AVAILABLE.	1.5, 2.5, 3. 4.5
N -85-605-00401 T50107	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C	IN-85-605-004	QTC	MEDICAL EMERGENCY RESPONSE COULD BE IMPROVED IF THE NUMBER OF PHONES, ESPECIALLY CRITICAL AREAS SUCH AS ANNULUS AREA OF CONTAINMENT ARE INCREASED. AT PRESENT ONLY TWO PHONES PER FLOOR ARE AVAILABLE. C/I HAS NO FURTRED.	1.6, 2.6, 3. 4.6, 6.3, 7.
N -85-737-00101 T50070	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-85-737-001	QTC	MEDICAL RESPONSE TEAM IS SLOW IN ARRIVING AT ACCIDENTS ON-SITE. NO FURTHER DETAILS AVAILABLE. NO FOLLOW-UP REQUIRED.	1.5, 2.5, 3. 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
TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

1 REPORT APPL
2 SAF RELATED
3 FIND CLASS

CONCERN NUMBER	CAT	SUB CAT	SHR D	PLT LOC	BF	BL	SQ	WB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTION CAT - SF SUBCAT - 908
N -85-746-00101 T50072	OP	305	S	WBN	1				IN-85-746-001	QTC	EXCESSIVE AND UNNECESSARY SUPPORT BR ACING INSTALLED IN AREAS WHICH PRODU CE A SAFETY HAZARD FOR PERSONNEL WHO MUST ENTER TO WORK IN THESE AREAS. EXAMPLES: #4 ACCUMULATOR ROOM, BIT TANK ROOM, ANNULUS AREA, MOTOR DRIV D VALVES CANNOT BE REACHED IN ADDITI ON, AN INJURED PERSON COULD NOT BE E VACUATED.	1.6, 2.6, 3. 4.6, 6.3, 7.
	02	SF 907	S	WBN	1	N	N	N Y				
					2	NA	NA	NA NO				
					3	NA	NA	NA C				
	03	SF 908	S	WBN	2	NA	NA	NA NO				
					3	NA	NA	NA E				
N -85-938-00201 T50100	SF	908	N	WBN	1	N	N	N Y	IN-85-938-002	QTC	CENTRAL ALARM STATION PERSONNEL ARE PROVIDED 3 MINUTES AIR PACKS, TO ALL OW SECURING OF STATION/CHANGEOVER OF STATION FUNCTIONS TO SECONDARY ALAR M STATION/EVACUATION OF STATION PERS ONNEL IN THE EVENT OF AN ATMOSPHERIC SED THAT 3 MINUTES DOES NOT PROVIDE AN ADEQUATE MARGIN OF SAFETY TO ALLO W PERSONNEL TO PERFORM REQUIRED FUNC TIONS, PLUS EVACUATE THEMSELVES FROM THE AREA. CI HAS NO FURTHER INFORM ATION. NO FOLLOW UP REQUIRED.	1.2, 2.2, 3. 4.2, 7.0
					2	NA	NA	NA NO				
					3	NA	NA	NA C				
-85-996-00301 T50153	SF	908	N	WBN	1	N	N	N Y	IN-85-996-003	QTC	EARLIER THIS YEAR A FIRE TRUCK CAUGH T FIRE DURING THE SECOND SHIFT. A S ECOND FIRE TRUCK ARRIVED ON THE SCEN E AND IN AN ATTEMPT TO EXTINGUISH TH E FIRE IT WAS DISCOVERED THAT THE SE COND FIRE TRUCK'S WATER TANKS WERE E CONSTRUCTION DEPT. CONCERN. NO FOLL OW UP REQUIRED.	1.1, 2.1, 3. 4.1
					2	NA	NA	NA NO				
					3	NA	NA	NA A				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

TEGORY: SF INDUSTRIAL SAFETY

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER
EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
EMPLOYEE CONCERN INFORMATION BY CATEGORY/SUBCATEGORY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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 -86-007-00101 T50100	SF	908	N	WBN	1 N	N	N	Y	IN-86-007-001	QTC	ASSISTING OR REMOVING AN INJURED/SICK PERSON FROM THE ANNULUS AREA WOULD BE EXTREMELY DIFFICULT AS NO PROCEDURE ARE ESTABLISHED FOR THIS EMERGENCY. CI HAS NO MORE INFORMATION. NO FOLLOW UP REQUIRED,.	1.6, 2.6, 3. 4.6, 6.3, 7.
					2 NA	NA	NA	NO				
					3 NA	NA	NA	D				
N -86-104-00101 T50120	OP	307	S	WBN	1					QTC	A COMPLETE EVACUATION DRILL IS REQUIRED. WHAT ARE THE PROCEDURES FOR TRAFFIC CONTROL IN CASE OF A REAL EMERGENCY? CI FEELS A COMPLETE EVAC. DRILL SHOULD BE CONDUCTED SO THEY WOULD KNOWN WHERE & WHEN TO GO FROM THE INFORMATION.	1.8, 2.8, 3. 4.8
					2							
					3							
02	SF	908	S	WBN	1 N	N	N	Y				
					2 NA	NA	NA	NO				
					3 NA	NA	NA	A				
N -86-111-00301 T50126	SF	908	N	WBN	1 N	N	N	Y	IN-86-111-003	QTC	CONSTRUCTION & NUC POWER EMERGENCY EQUIPMENT ARE NOT INTERCHANGBLE. STRETCHER IN CONST. AMBULANCE WILL NOT FIT POWER AMBULANCE. CI HAS NO FURTHER INFORMATION. NUC POWER CONCERN.	1.7, 2.7, 3 4.7
					2 NA	NA	NA	NO				
					3 NA	NA	NA	C				

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

ATEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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. SECTI CAT - S SUBCAT - 9
IN -86-203-00101 T50131	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-86-203-001	QTC	THERE IS A NEED FOR A PARAMEDIC RESC UE TEAM AT WATTS BAR AND ALL OTHER T VA NUCLEAR PLANTS. THESE RESCUE PEOP LE SHOULD BE TRAINED IN RIGGING STRE TCHERS OUT OF MANWAYS AND HIGH PLACE S. THEY SHOULD ALSO BE DRESSED OUT I A CONTAMINATED AREA AT A MOMENTS NOT ICE. THE PRESENT MEDICAL RESCUE SYST EM DOES NOT RESPOND IN A TIMELY MANN ER. CONSTRUCTION DEPT CONCERN. CI HA S NO ADDITIONAL INFORMATION.	1.6, 2.6, 2 4.6, 6.3, 7
IN -86-277-00201 T50251	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-86-277-002	QTC	PUBLIC SAFETY (CONSTRUCTION) IS NOT KNOWLEDGEABLE OF LOCATIONS IN SITE B UILDINGS AND GETTING EMERGENCY MEDIC AL TREATMENT OR ASSISTANCE SOON ENOU GH. INCIDENTS OF INCOMPETENCE AND M ISTREATMENT OF ILL/INJURED INDIVIDUA N IN FILE. CONSTRUCTION DEPARTMENT CONCERN.	1.5, 2.5, 3 4.5
IN -86-311-00501 T50256	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A		QTC	PUBLIC SAFETY ACTS VERY CONFUSED IN EVACUATING INJURED PEOPLE FROM THE S ITE. WITNESSES STATED THAT IT TOOK PUBLIC SAFETY TWO (2) HOURS TO EVACU ATE A PERSON SUFFERING FROM HEAT STR OKE IN THE ANNULUS AREA IN JULY OF 1 BUT WITHHELD TO MAINTAIN CONFIDENTI ALITY. NO ADDITIONAL INFORMATION MA Y BE RELEASED. CONSTRUCTION DEPARTM ENT CONCERN. NO FOLLOW-UP REQUIRED.	1.5, 2.5, 4.5

CONCERNS ARE GROUPED BY FIRST 3 DIGITS OF SUBCATEGORY NUMBER.

REFERENCE - ECPS131J-ECPS131C
FREQUENCY - REQUEST
ONP - ISSS - RNM

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

CATEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

CONCERN NUMBER	CAT	SUB CAT	S H R D	PLT LOC	1 REPORT APPL 2 SAF RELATED 3 FIND CLASS BF BL SQ NB	HISTORICAL REPORT	CONCERN ORIGIN	CONCERN DESCRIPTION	REF. SECTI CAT - S SUBCAT - 9
IN -86-203-00101 T50131	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-86-203-001	QTC	THERE IS A NEED FOR A PARAMEDIC RESC UE TEAM AT WATTS BAR AND ALL OTHER T VA NUCLEAR PLANTS. THESE RESCUE PEOP LE SHOULD BE TRAINED IN RIGGING STRE TCHERS OUT OF MANWAYS AND HIGH PLACE S. THEY SHOULD ALSO BE DRESSED OUT I A CONTAMINATED AREA AT A MOMENTS NOT ICE. THE PRESENT MEDICAL RESCUE SYST EM DOES NOT RESPOND IN A TIMELY MANN ER. CONSTRUCTION DEPT CONCERN. CI HA S NO ADDITIONAL INFORMATION.	1.6, 2.6, 2 4.6, 6.3, 7
IN -86-277-00201 T50251	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A	IN-86-277-002	QTC	PUBLIC SAFETY (CONSTRUCTION) IS NOT KNOWLEDGEABLE OF LOCATIONS IN SITE B UILDINGS AND GETTING EMERGENCY MEDIC AL TREATMENT OR ASSISTANCE SOON ENOU GH. INCIDENTS OF INCOMPETENCE AND M ISTREATMENT OF ILL/INJURED INDIVIDUA N IN FILE. CONSTRUCTION DEPARTMENT CONCERN.	1.5, 2.5, 3 4.5
IN -86-311-00501 T50256	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A		QTC	PUBLIC SAFETY ACTS VERY CONFUSED IN EVACUATING INJURED PEOPLE FROM THE S ITE. WITNESSES STATED THAT IT TOOK PUBLIC SAFETY TWO (2) HOURS TO EVACU ATE A PERSON SUFFERING FROM HEAT STR OKE IN THE ANNULUS AREA IN JULY OF 1 BUT WITHHELD TO MAINTAIN CONFIDENTI ALITY. NO ADDITIONAL INFORMATION MA Y BE RELEASED. CONSTRUCTION DEPARTM ENT CONCERN. NO FOLLOW-UP REQUIRED.	1.5, 2.5, 3. 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

TEGORY: SF INDUSTRIAL SAFETY
SUBCATEGORY: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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
H -85-021-00101 T50041	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA A		QTC	HOW ARE DISABLED/HANDICAPPED PERSONN EL SUPPOSED OF EVACUATE THE SITE IN CASE OF AN EMERGENCY?	1.8, 2.8, 3. 4.8
MM-85-003	01	SF	908	N	SQN	1 N N Y Y 2 NA NA NO NO 3 NA NA C E		OECP	HOW DO PERSONNEL USE 5 MIN. PORTABLE AIR PACKS?	1.2, 2.2, 3. 4.2, 7.0
BN-0043	01	SF	908	N	WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA E		OECP	NO EMERGENCY EYEWASH STATION AT EL 6 92 A7V-W INST. PANELS & PIPING IN AR EA CONTAIN BORATED WATER. AT THIS T IME EMERGENCY SHOWER ALSO BLOCKED BY SCAFFOLDS.	1.4, 2.4, 3. 4.4, 6.2, 7.

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: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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 - 908
BN-0064	01	SF	908	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA C		OECP	ONLY ONE 5 MINUTE O2 MASK IN CO2 STO RAGE VAULT IN YARD. SHOULD BE MINIM UM OF 2 AS USUALLY AT LEAST 2 WORKER S IN VAULT.	1.2, 2.2, 3. 4.2, 7.0
BN-0293	01	SF	908	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA E		OECP	ALL SCBA'S ARE LOCATED OUTSIDE THE P OWER BLOCK - SCBA'S SHOULD BE READIL Y ACCESSIBLE AT ALL LOCATIONS.	1.2, 2.2, 3. 4.2, 7.0
BN-0389	01	SF	908	N WBN	1 N N N Y 2 NA NA NA NO 3 NA NA NA B		OECP	EYEWASH AND SAFETY EMERGENCY SHOWER LOCATED AT A3 & T LINES IN AUX BUILD ING ON ELEV 713 IS OBSTRUCTED BY HAN GER STEEL. NEEDS MOVING TO A MORE C ONVENIENT LOCATION.	1.4, 2.4, 3. 4.4, 6.2, 7.

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: 908 EMERGENCY EQUIPMENT AND PLANT RESPONSE

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
LW-85-001	01	SF	908	N SQN	1 N N Y Y 2 NA NA NO NO 3 NA NA A A		OECP	CONCERN ON NUMBER OF SAFETY SHOWERS IN NEW WATER TREATMENT PLANT	1.4, 2.4, 3. 4.4, 6.2, 7.

28 CONCERNS FOR CATEGORY SF SUBCATEGORY 908

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. 90800-1
4. INITIATION DATE 8-12-86
5. RESPONSIBLE ORGANIZATION: WBN-Industrial Safety Section
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR Five Minute Escape Packs located in selected plant areas are of two varieties, Robert-Shaw and E.L.S.A. (Emergency Life Support Apparatus). HCI-PPE10 provides instruction for the use of the Robert-Shaw device. No instructions are available for the use of the E.L.S.A. units.

☐ ATTACHMENTS

7. PREPARED BY: NAME Charles J. Caudill — DATE: 8-12-86
8. CONCURRENCE: CEG-H Lon Ellis — DATE: 8/12/86
9. APPROVAL: ECTG PROGRAM MGR. D.W. Stewart — DATE: 2/2/87

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: _____ DATE: _____
12. CONCURRENCE: CEG-H: _____ DATE: _____
SRP: _____ DATE: _____
ECTG PROGRAM MGR: _____ DATE: _____

VERIFICATION AND CLOSEOUT

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

_____ _____ _____
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. 90800-2
4. INITIATION DATE 8-12-86
5. RESPONSIBLE ORGANIZATION: WBN-Industrial Safety Section
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR Response to medical emergencies has been delayed on occasion by the caller's inability to accurately identify her/her location. A system of "unique identifier" numbers, or an alpha-numeric identifier on each phone keyed to its plant location has been proposed by EMRT members to speed response to medical and fire emergencies.

☐ ATTACHMENTS

7. PREPARED BY: NAME Charles J. Caudill DATE: 8-12-86
8. CONCURRENCE: CEG-H Lon Callaway DATE: 8/12/86
9. APPROVAL: ECTG PROGRAM MGR. D.A. Nauman DATE: 8/12/86

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: _____ DATE: _____
12. CONCURRENCE: CEG-H: _____ DATE: _____
SRP: _____ DATE: _____
ECTG PROGRAM MGR: _____ DATE: _____

VERIFICATION AND CLOSEOUT

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

_____ _____ _____
TITLE DATE

ECSP CORRECTIVE Action Tracking Document (CAID)

INITIATION

1. Immediate Corrective Action Required: ☐ Yes ☒ No
2. Stop Work Recommended: ☐ Yes ☒ No
3. CAID No. 90800-3
4. INITIATION DATE 8-12-86
5. RESPONSIBLE ORGANIZATION: WBN-Industrial Safety Section
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR Employees assigned to the Emergency Medical Response Team (EMRT) have not been trained in rescue from difficult locations such as the lower containment areas of the Reactor Building, the Annulus, accumulator rooms, sumps, or heights. Equipment on hand is "believed to be adequate" --no formal evaluation has been conducted.

☐ ATTACHMENTS

7. PREPARED BY: NAME Charles J. Caudill DATE: 8-12-86
8. CONCURRENCE: CEG-H [signature] DATE: 8/12/86
9. APPROVAL: ECTG PROGRAM MGR. [signature] DATE: 8/12/86

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: DATE:
12. CONCURRENCE: CEG-H: DATE:
SRP: DATE:
ECTG PROGRAM MGR: DATE:

VERIFICATION AND CLOSEOUT

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

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. 90800-4
4. INITIATION DATE 8-12-86
5. RESPONSIBLE ORGANIZATION: WBN-Industrial Safety Section
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR A review of the plant's Hazard Control Instructions (HCI Manual), hazardous materials sections, reveals a lack of reference to the need for an emergency eyewash/shower in the following instructions: HM-5 Laboratory Safety, HM-6 Chlorine, HM-7 Hydrazine, HM-8 Ammonia, HM-13 Alcohol, and HM-7 Draining of Sodium Hypochlorite Storage Tank.

☐ ATTACHMENTS

7. PREPARED BY: NAME Charles J. Caudill DATE: 8-12-86
8. CONCURRENCE: CEG-H DATE: 8/13/86
9. APPROVAL: ECTG PROGRAM MGR. DATE: 8/20/86

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: DATE:
12. CONCURRENCE: CEG-H: DATE:
SRP: DATE:
ECTG PROGRAM MGR: DATE:

VERIFICATION AND CLOSEOUT

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

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. 90800-5
4. INITIATION DATE 8-12-86
5. RESPONSIBLE ORGANIZATION: WBN-Industrial Safety Section
6. PROBLEM DESCRIPTION: ☐ QR ☑ NQR Investigation into the concerns regarding the response of the Emergency Medical Response Team (EMRT) was complicated by a lack of records. No format exists for these reports and Public Safety Central-Alarm-Station (CAS) log entries are destroyed every six months.

   A record of emergency medical responses should be maintained.

   ☐ ATTACHMENTS
7. PREPARED BY: NAME Charles J. Caudill DATE: 8-12-86
8. CONCURRENCE: CEG-H [signature] DATE: 8/27/86
9. APPROVAL: ECTG PROGRAM MGR. [signature] DATE: 8/28/86

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

    ☐ ATTACHMENTS
11. PROPOSED BY: DIRECTOR/MGR: DATE:
12. CONCURRENCE: CEG-H: 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. 90800 - 6 4. INITIATION DATE 08/13/90
5. RESPONSIBLE ORGANIZATION: WBN - ONP
6. PROBLEM DESCRIPTION: ☐ QR ☒ NQR NU CON EMPLOYEES WORKING INSIDE UNIT 1 REACTOR BUILDING ANNULUS AREA ARE NOT AWARE OF ONP HAZARD CONTROL INSTRUCTION G-80 WHICH CLASSIFIES THIS AREA AS A "CONCEALED AREA" AND PROVIDES GUIDANCE FOR WORKING SAFELY IN THESE AREAS.

☐ ATTACHMENTS

7. PREPARED BY: NAME CHARLES J. CANDILL DATE: 8/13/90
8. CONCURRENCE: CEG-H [signature] DATE: 8/17/90
9. APPROVAL: ECTG PROGRAM MGR. [signature] DATE: 2/21/91

CORRECTIVE ACTION

10. PROPOSED CORRECTIVE ACTION PLAN:

☐ ATTACHMENTS

11. PROPOSED BY: DIRECTOR/MGR: _____ DATE: _____
12. CONCURRENCE: CEG-H: _____ DATE: _____
    SRP: _____ DATE: _____
    ECTG PROGRAM MGR: _____ DATE: _____

VERIFICATION AND CLOSEOUT

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

SIGNATURE	TITLE	DATE