EMPLOYEE CONCERNS

SPECIAL PROGRAM

VOLUME 3
OPERATIONS CATEGORY

SUBCATEGORY REPORT 30600
FIRE PROTECTION

UPDATED

TVA

NUCLEAR POWER

TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: 30600

REPORT TYPE: Watts Bar Nuclear Plant Subcategory

REVISION NUMBER: 2

TITLE: Fire Protection

PAGE 1 OF 29

REASON FOR REVISION:

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

(2) Incorporation of SRP and TAS comments.

PREPARATION

PREPARED BY: Charles W. Touchstone

C W Touchstone — August 11, 1987
SIGNATURE — DATE

(Note: Evaluators listed in Attachment I)

REVIEWS

PEER: [signature] — 8/12/87
SIGNATURE — DATE

TAS: W&K James E. Worthy III — 8/25/87
SIGNATURE — DATE

CONCURRENCES

		CEG-H: W. R. Longmire	8-12-87
		SRP: Jimmie W Joyce	8-27-87
SIGNATURE	DATE	SIGNATURE*	DATE

APPROVED BY:

James R Russell — 8-26-87
for ECSP MANAGER — DATE

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

1917T

HISTORY OF REVISION

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

Preface

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

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

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

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

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

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

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

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

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

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

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

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

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

ECSP GLOSSARY OF REPORT TERMS*

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

Class A: Issue cannot be verified as factual

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

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

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

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

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

concern (see "employee concern")

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

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

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

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

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

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

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

K-form (see "employee concern")

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

root cause the underlying reason for a problem.

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

Acronyms

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

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

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

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

Subcategory Report 30600

Executive Summary

I. SUMMARY OF ISSUES

The Fire Protection Subcategory is comprised of 13 employee concerns addressing nine issues relating to areas that could affect the overall success of the fire protection program. Four of these issues were found not to be substantiated. Two issues were found to be factually accurate but were not problems requiring corrective action. Three issues were factual and presented problems for which corrective action either has been or is being taken as a result of an employee concerns evaluation. These issues deal with (a) fire door weatherstripping, (b) fire door reliability, and (c) breaching of fire barriers.

II. SUMMARY OF FINDINGS

Through this evaluation process, several conditions were found to exist in violation of a design, construction, or operating requirement. Each of these conditions, called specific deficiencies, was noted as requiring short-term corrective measures. Inconsistencies were identified in corporate upper-tier documents regarding quality assurance (QA) requirements for safety-related fire protection equipment. Deficiencies were noted in various procedures and instructions reviewed at WBN and Browns Ferry Nuclear Plant (BFN). Numerous problems were found with the design, operation, testing, and inspection of plant fire doors and their closure mechanisms at all four TVA nuclear sites. Corrective Action Tracking Documents (CATDs) were submitted to the various plants' line management on these deficiencies as they were found.

III. SUMMARY OF COLLECTIVE SIGNIFICANCE

An Analysis of the major findings revealed a pattern of deficiencies that reflect adversely on management effectiveness at all sites. The overall problem in this subcategory can be stated as follows:

- There has been a lack of corporate control over the initial design, configuration, materials, and maintenance activities associated with fire protection systems.

IV. SUMMARY OF ROOT CAUSES

Management control problems turned up repeatedly in this subcategory. These include:

- various problems with procedures including procedural content, personnel error in following procedures, and lack of adequate process to ensure commitments are reflected in procedures (WBN, SQN, and BFN).
- inadequate controls for review of results to ensure compliance with commitments (WBN).
- inadequate acceptance criteria to ensure satisfactory task completion (WBN, SQN, BFN, BLN).
- there may have been unknowledgeable individuals performing design engineering tasks (WBN, SQN, BFN, BLN).

V. SUMMARY OF CORRECTIVE ACTION

1. Quality Assurance Issue

   For the finding regarding inconsistent corporate QA documents, it was determined by the TVA Fire Protection Section that no discrepancies existed in the Nuclear Quality Assurance Manual (NQAM) regarding the limited QA Program. However, discrepancies were noted regarding inconsistencies of WBN site documents to the NQAM and each other. A TVA deficiency report was issued to all sites to address this finding.

2. Fire Door Design, Operation, Testing, and Inspection

   At WBN the response to a deficiency report concerning inadequate fire door inspections was to revise the affected surveillance instruction (SI-7.53). This revision included the addition of several fire doors which had failed to be included in SI-7.53 and had been documented as such in Nonconforming Condition Report (NCR-W-422-P). At WBN, the Modifications Section will evaluate adequacy of several installed fire door closer mechanisms to design requirements. Also for WBN, the Division of Nuclear Engineering (DNE) will initiate actions to clarify a 10 CFR 50.55(e) report issued to the NRC regarding WBN fire door closer deficiencies. At SQN, a fire door inspection procedure (SI-261) will be revised to ensure proper door closer operation and adjustment. Regarding the failure of design personnel to consider differential air pressure effects on the operation of door closer mechanisms, BFN notes that DNE has instituted a study to correct this problem.

3. Procedure Deficiencies (WBN and BFN)

Regarding lack of operability inspections for nonsafety-related fire hose stations, WBN responds that these will be performed in a revised preventive maintenance procedure. The lack of a reference to a surveillance requirement (SR) in SI 7.31 will be resolved in revision 11 of SI-7.31.

WBN Maintenance Instruction (MI)-304.1 was written to resolve the deficiency noting lack of approved procedures for sealing pipe sleeve penetrations. At BFN, problems with documentation of work in an SI will be addressed by re-emphasizing the requirements of Plant Manager Instruction 17.1 to the BFN fire protection unit. For nonconformances of fire door equipment to as-constructed drawings, BFN management notes the plant is replacing fire doors under the Appendix - R program; these new doors and associated hardware will be correctly specified on drawings. BFN further notes that by using guidance from the NRC (Generic Letter 86-10 and Standard Review Plan 9.5), the fire protection system is being removed from the 10 CFR 50 Appendix B program, from the BFN Tech Specs, and from the critical structures, systems, and components (CSSC) list. |R2 |

For WBN, DNE will evaluate a deficiency involving inadequate implementation of a field change request (FCR). At SQN, fire door hardware and fire door key codes will be examined for configuration conformance.

Corporate

The Division of Nuclear Services is pursuing the initiation of the fire protection program assessment and improvement project. Included in the program will be an assessment of fire protection related procedures for all Office of Nuclear Power (ONP) organizations, assurance that commitments are adequately reflected in procedures, the adequacy of procedure implementation, the adequacy of controls necessary to ensure that results are in compliance with commitments, and correction of identified deficiencies.

Regarding fire door design and door closer deficiencies, TVA notes that Mechanical Design Standard DS-M17.3.3, Fire Barrier Standard, has recently been established to quantify design requirements for fire barriers. This standard will address reasonably anticipated differential pressure conditions in the specifying of fire doors and related equipment. Furthermore, DNE will issue a policy memorandum which will outline typical requirements applicable to fire doors. These requirements will be included in appropriate design input and output documents.

1.0 CHARACTERIZATION OF ISSUES

The Fire Protection Subcategory is comprised of 13 employee concerns that raise 9 issues about the adequacy of fire protection equipment and practices. The issues were grouped into two higher-order groups called elements. Each element is presented here with a brief description of its issues.

1.1 Element 306.01 - Fire Protection Equipment Works Improperly

Issue 306.01-1 - Difficulty Opening Fire Hose Station Valves

IN-85-607-001

The concerned individual (CI) alleged that most of the handwheel type fire hydrants in the plant areas of units 1 and 2 at Watts Bar Nuclear Plant (WBN) can not be operated without tools, thus constituting a safety hazard.

Issue 306.01-2 - Plant Fire Door Weatherstripping Damaged

OW-85-002-002

The CI was concerned about damage to the weatherstripping on fire doors in the WBN Auxiliary Building.

Issue 306.01-3 - Plant Fire Door Closure Problems

IN-85-311-008
OW-85-002-003

Two CIs expressed concern that fire doors at WBN do not close properly.

Issue 306.01-4 - Penetration Seals Breached Without Permits

IN-85-017-001
IN-85-130-002
IN-86-084-001
WBN-MM-85-002

Four CIs claimed that penetration fire seals are being breached without permits at WBN.

Issue 306.01-5 - Fire Protection in Control Building Battery Board Room Inadequate

WBN-MM-85-003

The CI claimed there is no fire protection inside the control building board rooms, elevation 692 at WBN and therefore fire extinguishers should be added.

Issue 306.01-6 - Fire Alarm Activation Method Inadequate

WBN-0042

The CI was concerned that the present method of activating fire alarms at WBN results in many false alarms.

Issue 306.01-7 - Fire Protection Equipment Inspection Inadequate

EX-85-053-005

The CI claimed that fire protection equipment at WBN is neglected and not checked at proper intervals.

1.2 Element 306.02 - Cable Tray Fire Barriers and Penetration Sleeve Drawings

Issue 306.02-1 - Cable Tray Fire Barriers Improperly Installed

IN-85-181-002

The CI contended that the fire barriers (Kaowool Board) around cable trays at WBN have excessive gaps.

Issue 306.02-2 - Penetration Sleeves Not Cross-referenced to Conduit Numbers

IN-85-842-001

The CI cited several areas at WBN where the nuclear power numbers on penetration sleeves were not cross-referenced to the conduit numbers or were not the same numbers as on the design drawings.

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

Attachment A, Subcategory Summary Table

Attachment B, List of Concerns by Element/Issue

2.0 EVALUATION PROCESS

2.1 General Methodology

The evaluation of this subcategory was conducted according to the Evaluation Plan for the Employee Concerns Task Group and the Evaluation Plan for the Operations Group. The concern case files were reviewed. Source documents were researched and interviews conducted in order to identify the requirements and criteria which applied to the issues raised by the concerns. The issues were evaluated against the identified requirements and criteria to determine findings. A collective significance analysis was conducted; causes were indicated for negative findings; and corrective action for the negative findings was initiated or determined to have already been initiated.

2.2 Specific Methodology

The evaluator reviewed applicable sections from the following baseline requirements documents: Title 10 Code of Federal Regulations, Part 50 (10 CFR 50), TVA Nuclear Quality Assurance Manual (NQAM), Technical Specifications for Sequoyah Nuclear Plant (SQN) and WBN, and TVA Fire Protection Manual. To ensure consistency and implementation of the requirements found in these documents, the evaluator reviewed the WBN Physical Security Plan (PHYSI-2) and applicable Quality Control Procedures, General Operating Instructions, Administrative Instructions, Modifications and Additions Instructions, Preventive Maintenance Instructions, and Surveillance Instructions. Other material reviewed included Potential Reportable Occurrence (PROs), Significant Condition Reports (SCRs), Corrective Action Reports (CARs), Nonconforming Condition Reports (NCRs), Maintenance Requests (MRs), TVA drawings, files of employee concerns expurgated by NRC, and reports of concerns previously investigated.

The evaluator conducted informal interviews with cognizant personnel when required either to verify document-based findings or to provide nondocument-based evaluation input. Interviews were conducted at WBN with the fire protection engineer, members of the fire brigade, mechanical maintenance engineers, a mechanical test engineer, a quality assurance engineer, Operations personnel, DNE Architecture Branch personnel, and an evaluator in the ECTG Construction Category Evaluation Group (CEG). Interviews were also conducted with personnel in SQN Mechanical Maintenance, DNE Architectural Branch, DNE Regulatory Engineering, and SQN Licensing. Walkdowns were conducted on several penetrations to check for proper identification and on several randomly selected Auxiliary Building fire doors to check for weatherstripping damage and the adequacy of fire door closure mechanisms.

From their element evaluation findings, the evaluator identified specific deficiencies and analyzed them for perceived root causes at the element level as appropriate. A final determination was made on whether or not each specific deficiency was safety-related. The evaluator initiated CATDs for specific deficiencies that had been identified during the element evaluations. The evaluator documented findings, specific deficiencies, and perceived root causes in accordance with the Operations Category Evaluation Plan.

3.0 FINDINGS

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

3.1 Element 306.01 - Fire Protection Equipment Works Improperly

Issue 306.01-1 - Difficulty Opening Fire Hose Station Valves

The concern regarding difficulty in opening fire hose station valves was substantiated. Corrective action was found necessary for inspection procedures for nonsafety-related hose stations. This concern was determined to have been evaluated previously by the WBN Industrial Safety Engineering Staff. The staff's previous investigation had substantiated the concern in that handwheel type fire hydrants throughout WBN had frequently been "dogged down" by construction personnel at the time of installation to avoid or prevent leakage past the valves. However, the staff had not believed this to be a safety problem, as stated in the concern, for several reasons.

First, these fire hydrants are intended for use by fire brigade members who have ready access to the necessary tools to open stuck valves. Second, those handwheel-type fire hydrants required for protection of safety-related equipment are inspected under Surveillance Instruction (SI)-7.23. Valves found to be too tight during these inspections are corrected by maintenance requests. Third, all remaining nonsafety-related valves will be undergoing inspections similar to those done to safety-related valves. The nonsafety-related valves will be inspected under Preventive Maintenance Instruction FP-4. Although there is no existing requirement for nonsafety-related valves to undergo inspections similar to those for safety-related valves, it was determined that the additional inspections should be done as a prudent measure in response to the concern's investigation. CATD 30601-WBN-01 was issued to address a need for these inspection procedures.

To evaluate the historical significance of tight or inoperable hose station handwheels, a search of maintenance history was conducted. Computer generated listings of WBN maintenance requests (MRs) affecting fire protection (system 26) isolation valves and hose stations were obtained from WBN Document Control Section. The listings summarize equipment problems or testing requirements as documented on MRs from February 1982 to December 1986.

The computer listings itemize 156 MRs, 60 of which involve fire protection hose stations. These stations were compared to those stations listed in WBN Tech Specs, to determine which MRs affect safety-related hose stations. It was found that 45 MRs were issued on 70 safety-related hose stations. None of these MRs present evidence that the maintenance or testing needed was a result of tight, stuck, or otherwise inoperable handwheels.

Conclusion

This issue was validated based on the report by the WBN Industrial Safety Engineering Staff. Corrective action was initiated by CATD 30601-WBN-01.

Issue 306.01-2 - Plant Fire Door Weatherstrippping Damaged

The concern regarding damage to the weatherstripping of fire doors in the WBN Auxiliary Building was determined to have been evaluated previously by the Quality Technology Company (QTC). The QTC investigation had substantiated the concern. The current evaluation concurs with the QTC report's conclusion that the concern is valid. The QTC investigation had found a report done by Underwriters Laboratory (UL) in November 1984 in which degraded weatherstripping conditions and non-UL listed materials had been noted. QTC had conducted a field walkdown of 15 fire doors within the Auxiliary Building which had verified deficiencies such as torn and missing weatherstripping.

The current evaluation of this concern sought to identify any corrective actions resulting from the previous UL and QTC reports. With respect to the UL report findings, the WBN fire protection engineer indicated that UL material is required in accordance with design drawings and that "fixes" to the problems identified by UL should have occurred. With respect to QTC walkdown deficiencies, it was found that only one door had been repaired. Plans were being made to correct the remaining deficient fire doors before fuel load under revised SI 7.31, "Fire Door Semi-Annual Inspection." This SI was found to have been revised and does require inspection of weatherstripping on all fire doors. It was found, however, that this SI did not contain the cross-reference for the surveillance requirement which applies to weatherstripping inspections. Line management was notified of this deficiency by CATD 30601-WBN-02.

It was determined that WBN Mechanical Maintenance (MM) personnel had implemented a Preventive Maintenance (PM) Instruction that required monthly inspections of weatherstripping in all fire doors in the interim Auxiliary Building Secondary Containment Enclosure (ABSCE). This had been done even though there were no requirements to do this. Upon elimination of the interim ABSCE, MM will perform weatherstripping inspections under revised SI-7.31 and the PM instruction will be cancelled.

Further review of other inspection procedures for fire doors revealed deficiencies in Public Safety Section's SI-7.53, "Daily and Weekly Fire Door Inspection." It was determined that the SI does not verify equipment operability before fire door inspections and does not satisfy a specific surveillance requirement. WBN line management was notified of this condition in CATD-30601-WBN-03.

Conclusion

The issue of damaged fire door weatherstripping was validated for WBN. Corrective action as a result of the QTC investigation consisted of revision of fire door surveillance procedures. No specific deficiencies or adverse effects on safety were identified.

Generic Applicability

This concern was evaluated for WBN only. It was determined that the problem was the result of WBN procedure inadequacies and therefore no other site evaluations are necessary.

Issue 306.01-3 - Plant Fire Door Closure Problems

IN-85-311-008
OW-85-011-003

WBN

Concern IN-85-311-008 stating that fire door A143 outside the control room is habitually open was evaluated previously by the Nuclear Safety Review Staff (NSRS) and was substantiated. The current evaluation agrees that the concern was valid and found that additional corrective action beyond that identified by the NSRS was needed. The NSRS conclusion was based on the following:

a. Door A143 was verified to remain open most of the time during an observation period, thus constituting an unauthorized fire barrier breach.

b. The incorrect door closure mechanism had been installed on door A143.

c. No cross-reference had existed onsite to verify the approved "engineering equivalent" door closure mechanism type and model, and this had resulted in the incorrect hardware being installed on door A143.

d. Door closure mechanisms for the particular vendor are not uniquely identified; therefore, when the door closure mechanism had been removed from its shipping container, traceability for hardware model and type had been lost, resulting in incorrect hardware installation on door A143. CATD 30601-WBN-09 was issued on this deficiency.

The Division of Nuclear Construction (DNC) had responded to the NSRS report by submitting NCR 6306. In the NCR, DNC had committed to reworking door A143 according to Quality Control Procedure (QCP)-2.18. Furthermore, DNC had committed to inspecting, reworking, and documenting per QCP-2.18 all fire doors in QA buildings needed for operation of unit 1 and having surface-mounted, concealed, and mortise door closure mechanisms. The DNE had been committed in the NCR to updating TVA drawing series 46W454 to provide a cross-reference to verify the engineering equivalent to each fire door closure mechanism.

DNE had written a 10 CFR 50.55(e) Final Report to NRC on January 3, 1986, based on the significance of NCR 6306 and stated action taken or planned by TVA with respect to fire door closure mechanisms. The report determined the root cause deficiency to be failure to adequately address the requirement for closure mechanisms to close doors against airflow and to accurately specify the equipment to be installed in applicable output documents. The report further stated that all corrective actions for the fire door closure mechanism problems would be completed prior to initial fuel load with an internal commitment date from management of February 28, 1986.

The current evaluation found that certain fire doors in the Auxiliary Building had been inspected and re-worked as necessary by March 1986. This had included fire door A143. However, a review of the applicable maintenance request (MR) which documented the DNC inspection revealed that not all fire door closure mechanisms had been considered for inspection. Several predominately "heavy equipment" doors had not been inspected. Additionally, the model number for two installed closure mechanisms was indeterminate because of improper implementation of a Field Change Request (FCR). Also, it was found that a cross-reference to identify substitute door closure mechanisms on design drawings (in accordance with the 50.55(e) report) had not been done for the majority of plant fire doors. CATDs 30601-WBN-05, -06, and -08 were issued to affected WBN organizations for these three deficiencies.

The 10 CFR 50.55(e) report stated that QCP-2.18 had been revised to require affected quality control personnel to verify the type and model number of closure mechanisms. This statement was found to be accurate. However, this appeared not to satisfy an internal commitment made by DNC to the NSRS to revise QCP-2.18 to provide for traceability of door closure mechanisms. Though the QCP was revised, there is still no requirement in the procedure to record model number and type of door closure. Therefore, traceability did not appear adequately provided. CATD 30601-WBN-04 was issued to DNC at WBN for this apparent deficiency. WBN line management in response to this CATD found that documentation of traceability does not require door closure model and type to be recorded on the QCP data sheet. Furthermore, QCP-2.18 was found to meet all program requirements. This response was determined adequate by the ECTG and therefore no further corrective action is needed for CATD 30601-WBN-04.

During the evaluation of concern IN-85-311-008, inconsistencies were noted between three TVA upper-tier documents with respect to the QA requirements for safety-related fire protection equipment. A DNE design standard and a DNC specification were found to implement limited QA requirements for some safety-related fire protection equipment which the NQAM states to be subject to all 10 CFR 50 Appendix B QA requirements. CATD 30601-NPS-01 was issued to TVA corporate to address this finding.

Concern OW-85-002-003 relating to the Turbine Building fire doors was not substantiated. Five rolling (sliding) fire doors separating the Control and Turbine Buildings on various elevations were considered. It was found that these doors are tested semiannually in WBN Surveillance Instruction (SI)-7.31 to verify proper door operation. A review of three completed performances of this SI found the doors had tested successfully in March and September of 1985 and March of 1986. Discussions with a WBN Mechanical Maintenance Engineer and the WBN Fire Protection Engineer indicate the Turbine Building rolling fire doors are reliable.

Regarding the CIs statement that the sliding doors do not close tight, it was found that a maximum gap of 3/4-inches between the door and frame is allowed with the door in the closed position. Successful performance of SI-7.31 ensures that sliding fire doors meet the gap requirement. |R

SQN

Concern IN-85-311-008 regarding fire door A143 at WBN was evaluated for generic applicability to SQN and could not be substantiated. The door at SQN was found to work satisfactorily. However, during the evaluation there was evidence that many installed door closure mechanisms did not conform with those called for in the drawings. Door A143 was one of three fire doors found to have a door closure

mechanism model different from that specified in the SQN architectural door and hardware schedule. CATD 30601-SQN-002 was issued to SQN line management to track the SQN plan for resolving drawing non-conformances.

In each of the three cases where the installed door closure mechanism model differed from the scheduled model, the installed mechanism was found to be of greater strength than the mechanism specified by schedule.

During the evaluation of the concern, the SI program on fire doors at SQN was found to be working properly. Many MRs written between September 1984 and May 1986 had been completed on fire door closure mechanisms to resolve deficiencies found through the performance of SI-261, "Visual Inspection of Technical Specification Fire Doors on a Periodic Basis."

It was found that fire door closure problems due to differential air pressure across the doors have frequently occurred at SQN. These problems have been resolved on a case-by-case basis through the MR process or FCR process. Significant Condition Report (SCR)-SQNAB8601 RO, dated February 7, 1986, documented failure of some fire doors to close against differential pressure. The report stated that actual differential pressures across these doors varied from the design differential pressure; however, neither actual nor design differential pressures had been considered in the sizing of door closure mechanisms. The engineering report written to address the SCR stated that adequate procedures are in effect to identify fire doors unable to close and latch after each use. It suggested that SI-261 be revised to require a normal ventilation lineup and a building pressure in the required range before and during performance of the SI. This action would ensure a consistent baseline each time the SI is performed. The engineering report also suggested resolution of any fire door closure problems either by adjustment of the door closure mechanism or by correcting excessive differential pressure across the door. One architect in DNE believed that DNE should perform an analysis to determine closure strength for doors which have a differential pressure across them by design. CATD-30601-001-SQN was issued to DNE Architectural Branch to track completion of SCR-SQNAB8601.

BFN

Concern IN-85-311-008 regarding fire door A143 at WBN was evaluated for generic applicability to BFN. The concern as stated was not substantiated; however, other problems were identified during the evaluation and were found to require corrective active. It was determined that some problems with closure of doors because of differential pressure across the doors had occurred before the current evaluation and had been corrected already.

During the evaluation of this concern, several specific deficiencies including potential safety-related problems were noted related to the design and inspection of fire door closure mechanisms. First, it was found that differential pressure effects on fire doors had not been considered by BFN design personnel during the design of closure mechanisms for fire doors. Second, the SI for testing fire doors was found not to address ventilation conditions under which the door should be tested. Third, problems were found with documentation of work performed under the SI for testing fire doors. Fourth, it was determined that a non-PORC (Plant Operation Review Comittee) approved instruction is being used to implement a commitment to NRC to perform daily inspection of fire doors. Fifth, it was found that there may be some installed fire door closure mechanisms which do not agree with as-constructed drawings. It was determined that an Appendix R package being assembled at the time of this evaluation would partially correct the fifth problem. CATD-30601-BFN-001 was issued to BFN line management to document all of the above findings.

BLN

Concern IN-85-311-008 regarding fire door A143 at WBN was evaluated for generic applicability to BLN. The concern as stated was not substantiated, however evidence of fire door closure problems similar to those at WBN, SQN, and BFN was found. No safety-related issues were identified, however. It was determined that problems with fire door closure because of differential pressure across the doors either have occurred or are anticipated at BLN. In a recent design study affecting approximately 47 fire doors, problems with fire door closure had been investigated, calculations had been performed, and corrective actions had been proposed. Implementation of corrective action was expected to begin in October, 1987 through an engineering change notice (ECN). CATD 30601-BLN-01 was issued to BLN management to track implementation of the ECN.

Conclusion

The issue of fire door closure problems was validated at WBN. Corrective action was found necessary as a result of the NSRS and current employee concern evaluations. At SQN and BFN, the specific concern could not be substantiated, however other problems requiring corrective action as a result of a concern investigation were identified. At BLN, the specific concern was not substantiated however evidence of fire door closure problems was found. Corrective action for this problem was found to have been initiated at BLN prior to the concern evaluation. Concern OW-85-002-003 regarding rolling fire door closure problems at WBN was not validated.

Generic Applicability

IN-85-311-008 - This concern was evaluated at all nuclear sites.

OW-85-002-003 - This concern was evaluated at the site of concern (WBN) and found not valid. No other site evaluations are necessary.

Issue 306.01-4 - Penetrations Seals Breached Without Permits

Concern IN-85-130-002 regarding the breaching of electrical penetration fire seals/barriers without breaching permits was determined to have been evaluated previously by the NSRS and QTC.

These reports had substantiated the concern. The current evaluation concurs with the findings and conclusions of the NSRS and QTC. Concerns IN-85-017-001 and IN-86-084-001 were judged to be similar to IN-85-130-002 and were resolved based on the same findings and corrective action. The NSRS/QTC investigations for concern IN-85-130-002 had noted deficiencies in the breaching program including breached penetrations not being adequately tracked, Physical Security Instruction (PHYSI)-2 Attachment D data sheets not being initiated as required, and penetrations being breached without an Attachment D being posted. There had also been discrepancies between Watts Bar Site (WBS) and DNC methods of handling breaching.

Corrective actions for these previous deficiencies had included a WBN plant directive to DNC stating that any fire rated assembly (penetration) associated with unit 1 operation that must be breached shall be done so only through NUC PR involvement. Additionally, all breaching and restoration involving assemblies for Power and Engineering (Nuclear, P&E) will be performed by Mechanical Maintenance. Other corrective action included the development of a specific procedure for handling construction breaching permits. All personnel involved with the request and preparation of work releases, maintenance requests, and PHYSI-2 Attachment Ds had undergone training in the use of these forms, in the importance of preplanning modification activity, and in the limitations on open breaches. Therefore, the current evaluation determined that appropriate corrective action had been taken and that no adverse effects on safety existed. However, it was noted that the specific procedure for handling construction breaching permits was in need of

revision to reflect the current organizational structure of DNC. CATD 30601-WBN-07 was issued to address this procedure item.

Concern WBN-MM-085-002 regarding an improper conduit breach was validated. The subject of this concern is also expressed in concern number IN-86-103-001 which is evaluated in the ECTG Construction Subcategory No. 11200. The Construction report notes that an NSRS evaluation (I-85-427-WBN) was performed September 9-30, 1985 on concern IN-86-103-001. The concern was validated since conduit MC945 was found breached in an unauthorized manner with no PHYSI-2, Attachment D in effect at the time of inspection by NSRS. The breached assembly was documented during the performance of Surveillance Instruction (SI)-7.25 in August 1985. In accordance with the Plant Operation Review Committee (PORC) minutes of July 5, 1985, it was decided that no PHYSI-2 Attachment D was required at that time. A WBN maintenance request (MR) A-585284 was generated to restore conduit MC 945B to comply with 3-M fire wrap specifications. The PHYSI-2 now applies to breaching of cable wraps. No further action is required.

Conclusion

This issue was substantiated at WBN and required corrective action as a result of NSRS, QTC, and ECTG employee concern evaluations.

Generic Applicability

These concerns were evaluated at WBN only. It was determined that the problem was the result of WBN procedure inadequacies and lack of coordination with DNC. This isolates the problem to WBN and no other site evaluations are necessary.

Issue 306.01-5 - Fire Protection in Control Building Battery Board Room Inadequate

The concern regarding lack of fire protection in the WBN Control Building battery board rooms was not substantiated.

The WBN Fire Hazard Analysis Table specifies fire protection requirements for the Control Building (CB) 692 battery board rooms and includes dry-chemical fire extinguishers, smoke detectors, and a Class III standpipe system (hose station).

A walkdown was conducted of all battery rooms and battery board rooms on elevation 692 of the Control Building. There are two battery board rooms (rooms C4 and C5) on this elevation each having portable Halon fire extinguishers, smoke detectors, and telephones. Located just outside the board rooms are dry chemical fire extinguishers. Fire suppression hose stations are located in both CB stair wells at elevation 700; these stations will reach the board rooms provided an extra length of hose is attached. Industrial safety personnel noted that the WBN Fire Brigade team carries additional fire hose when responding to fires.

Conclusion

This issue was not validated. Fire protection for the battery board rooms is adequate and in compliance with design specifications.

Generic Applicability

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

Issue 306.01-6 - Fire Alarm Activation Method Inadequate

The concern regarding the method of fire alarm activation at WBN was not substantiated.

The activation method for fire alarms and medical emergencies at WBN requires dialing 8299 from a plant telephone; this action immediately sets off the alarm. The call is responded to by WBN Operations personnel who request identification of caller and a description of the emergency. Operations personnel take appropriate emergency action at that time.

Discussions with Operations and Industrial Safety Section personnel reveal no requirement to use the phone method for alarm activation, although NFPA Codes do require some system be implemented. Both sections agree that false alarms are an annoyance at best but overlook these problems in lieu of the phone method's reliability and effectiveness. A shift engineer in WBN Operations estimated false alarms due to pranks, jokes, etc., to occur at a rate of less than once per 24 hours. This individual noted that testing of fire alarm, evacuation alarm, "all clear," and paging system is done weekly and documented in the unit operator's journal.

According to electrical maintenance personnel, a field change request (FCR) had at one time been drafted to provide a time-delay relay for the phone alarm activation circuitry and thus reduce incidence of false alarms. This FCR was apparently cancelled when plant management observed a decrease in the frequency of false alarms.

Conclusion

This issue was not validated. The present method of fire alarm activation though an annoyance at times, is reliable and effective.

Issue 306.01-7 - Fire Protection Equipment Inspection Inadequate

The concern regarding neglect of fire protection equipment and improper testing frequency of this equipment was not substantiated. It was determined that WBN performs surveillance instructions according to technical specification requirements for fire protection systems which protect safety-related equipment and areas. During the current evaluation, reviews of surveillance procedures for various equipment such as safety-related hose stations and fire doors have indicated conscientious efforts to maintain WBN fire protection equipment.

Conclusion

This issue was not validated.

Generic Applicability

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

3.2 Element 306.02 - Cable Tray Fire Barriers and Penetration Sleeve Drawing Problem (WBN)

Issue 306.02-1 - Cable Tray Fire Barriers Improperly Installed

The concern regarding gaps between the pieces of cable tray fire barrier at WBN was not validated. A review of the WBN procedure for electrical penetration modifications, MAI-14, and of the DNC procedure for fire stops, QCP-1.55, uncovered no requirement for a maximum gap between the M board and cables. The requirement in both of these procedures is to place the Kaowool M board snugly around cables and cable tray and to pack Kaowool fiber in cracks and

voids. Analysis of WBN drawing 45W883-1, revisions 5 through 15, did not reveal any requirement for a maximum barrier gap. The drawing states in "Note 9" to "cut Kaowool M board to follow contour of cables."

Discussions with an ECTG Construction CEG evaluator and review of Construction CEG Element Report on cable trays revealed that TVA never had a requirement for a 1/8-inch maximum gap between the fire barrier and cable tray. Further review of this report indicated that the Kaowool fiber has a fire rating exceeding that of the Kaowool board.

Conclusion

This issue was not validated. Cable tray fire barriers are installed in accordance with design and construction specifications. These specifications require that Kaowool M board be installed snugly around cables and cable tray with Kaowool fiber placed in cracks and voids. There are no criteria regarding gap size for these applications.

Generic Applicability

This concern was evaluated at WBN and found not valid. No other site evaluations are necessary.

Issue 306.02-2 - Penetration Sleeves Not Cross-referenced to Conduit Numbers

The concern regarding penetration sleeves not being cross-referenced to conduit numbers was determined to have been previously evaluated by NSRS. The NSRS report had concluded that the concern could not be substantiated. In the NSRS investigation MRs reviewed had met all requirements from 10 CFR 50 Appendix B, Criteria III, VIII, and X, concerning drawing numbers and penetration numbers. However, the ECTG evaluation of this concern found it to be valid as stated but not a problem and therefore would not require corrective action.

It was determined that the "nuclear power number" the concerned individual had referred to is actually an "SI number" which corresponds to the Technical Specification surveillance instructions for fire protection. The SI number, if used on an MR, is cross-referenced in the SI to a mark number (in the case of penetration sleeve seals) or a cable tray number. The applicable

drawing number which illustrates the penetration sleeve seal or cable tray penetration seal is also given in the SI. For conduit penetrations, the Conduit and Grounding drawings indicate required details. No documents were found which would require a conduit and its associated penetration to be cross-referenced.

A review of six MRs for sealing pipe sleeve penetrations showed that identification of penetration drawings and SI numbers was satisfactory. However, it was found that the MRs contained attached instructions for performing work which had not been approved by PORC. AI-9.2 indicates that MRs for complex work on CSSC equipment either must refer to a PORC-approved instruction or must become PORC-approved. It was determined that in the past QA had not considered MRs of the type reviewed sufficiently complex to warrant PORC approval. However, it was agreed by QA and by Mechanical Maintenance that there is a need for PORC-approved instructions which could be used to perform sealing of pipe sleeve penetrations. CATD 30602-WBN-02 was issued on this finding.

Conclusion

This concern is valid as stated but is not a problem and therefore requires no corrective action.

Generic Applicability

This concern was evaluated at WBN and determined to be factual. The practice was determined to cause no adverse effects. A side issue of inadequate procedure approval was identified for WBN. No other site evaluations are necessary.

4.0 COLLECTIVE SIGNIFICANCE

A collective assessment of the element-level findings (Section 3.0) led to the identification of the following subcategory-level finding which reflected adversely on management effectiveness at all sites:

- There has been a lack of corporate control over the initial design, configuration, materials, and maintenance activities associated with fire protection systems.

Several examples from the element-level findings support the subcategory-level finding. Ventilation requirements were not factored into the design of fire doors at WBN, SQN, BFN, and BLN. Also, installed fire door closure mechanisms at WBN, SQN, and BFN did not conform to the drawings. There was repeated ineffective control and follow-through involving DNE, DNC, and WBN personnel regarding various commitments made for WBN fire doors. Deficiencies had also been noted in the breaching program for electrical penetration fire seals/barriers at WBN. In general, it was concluded that there has been ineffective management of the major regulatory activity of fire protection.

5.0 ROOT CAUSE, PRELIMINARY ANALYSIS

Sections 3.0 and 4.0 discussed the specific findings for each of the element evaluations of this subcategory and their collective significance. This section presents the results of the independent review and analysis done on these specific element-level findings to identify the most frequently occurring and widespread root causes at the subcategory level. Patterns of recurring findings called symptoms were derived from the elements. These symptoms were tested for root causes, and the root causes for both elements were then analyzed collectively to identify which occurred most frequently and at which sites. Details of the symptoms and root causes derived for each element are presented in Attachment D, Summary of Symptoms and Root Causes.

A review and analysis of these root causes taken collectively points to several significant root causes for the subcategory as follows:

a. Various problems exist with procedures including procedural content, personnel error in following procedures, and lack of adequate process to ensure commitments are reflected in procedures (WBN, SQN, and BFN).

b. There are inadequate controls for review of results to ensure compliance with commitments (WBN).

c. There are inadequate acceptance criteria defined to ensure satisfactory task completion (WBN, SQN, BFN, BLN).

d. There may have been unknowledgeable individuals performing design engineering tasks (WBN, SQN, BFN, BLN).

These root causes can be applied specifically to the elements of this subcategory. The first root cause applies to Element 306.01 regarding (a) content and personnel use of the breaching procedures at WBN, and (b) nonconformances with door schedules at SQN and BFN. This root cause also applies to Element 306.02 regarding MR procedures lacking specifics. An example from Element 306.01 supporting the second root cause is the inadequate implementation of corrective actions to which DNC and DNE had committed in NCR 6306 and the 10 CFR 50.55e report. Another example from Element 306.01 was the inadequate review of applicable drawings to ensure that they had been updated with current door closure mechanisms. The third and fourth root causes apply to Element 306.01 regarding ventilation requirements not being factored into the design of the fire doors at WBN, SQN, BFN, and BLN.

Corrective Action Tracking Documents (CATDs) 30600-NPS-01,02,03, and 04 were issued for these four subcategory-level root causes. Furthermore, it was believed that corrective action being taken already by line management as part of the commitments made in the Nuclear Performance Plan were helping to address these root causes.

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

6.0 CORRECTIVE ACTION

6.1 Corrective Action at the Element Level

Element 306.01 - Fire Protection Equipment Works Improperly

NPS

CATD 30601-NPS-01 was issued to the Division of Nuclear Quality Assurance (DNQA) and DNE to identify the inconsistencies in corporate upper-tier documents regarding QA requirements for safety-related fire protection equipment. It was requested that all TVA nuclear plants be included in the corrective action response. The corporate response was:

"Based on review of the QTC concern number IN-85-607-001 as per ECSP CAID number 30601-NPS-01, it was determined that no discrepancies existed in NQAM, part I, section 1.3, revision 0 by Fire Protection. However, discrepancies were noted regarding inconsistencies of some of the reference documents (WBN site documents) to the NQAM and each other. DR NCO-DR-87-009-R was generated and issued to WBN 2/20/87. A similar condition was identified, by the reviewer, on a Sequoyah CAR (CAR, SQ-CAR-87-002), and referenced on the DR."

"NCO-DR-87-009-R is being transmitted to SQN, BFN, and BLN for evaluation and a requirement to provide a response indicating the results of their review."

WBN

Nine CATDs were issued to WBN line management--one (30601-WBN-01) regarding fire hose station valves, one (30601-WBN-07) regarding breaching of fire-rated barriers, and seven (30601-WBN-02 thru 06, 08, and 09) regarding plant fire doors.

30601-WBN-01

It was requested that line management provide a schedule for implementing inspection of fire hose station valves in nonsafety-related areas. The line response was:

COMPLETED 3-16-88

"PM:FP-4 will be revised to include an operability check of nonsafety-related fire hose valves, similar to SI-7.23. This revision will be completed by 04-03-87."

30601-WBN-02

There is no cross reference for surveillance requirement (SR)-4.7.12.1 in Surveillance Instruction (SI)-7.31 which performs weather stripping inspections. The line response was;

"SI-7.31 is in the process of being revised as stated in ECSP draft report Section III.B.1. This revision does inspect fire doors per SR-4.7.12.1.b and references this in the SI. This will be revision 11 to SI-7.31 and will be POR reviewed by 02-27-87."

COMPLETED 2-18-88

30601-WBN-03

Deficiencies related to SI-7.53

(1) SI-7.53 does not verify equipment operability before fire door inspections.

(2) Performance of SI-7.53 has not satisfied Tech Spec SR 4.7.12.2.c. The line response was:

"1. SI-7.53 did not inspect electrically supervised doors. If one of the doors' electrical supervision was out of service, a guard would be posted per the Security License requirement. The guard would not be a fire watch therefore there would be a possibility of missing the LCO on these doors. A DR was written to report this condition (WB-DR-87-16). SI-7.53 Revision 7 (PORC approved 02-20-87) requires the inspection to be made on all fire doors including the electrically supervised doors. This will resolve this CATD and WB-DR-87-16.

"2. Fire door list on SI-7.31 and SI-7.53 did not agree on the following doors:

a. Personal airlock, elevation 713 and elevation 757 and also U-1 Reactor Building equipment hatch are in SI-7.31 but not in SI-7.53. These are not fire doors per the 46W454 drawings. An NCR (W-422-P) was written against these doors and added to SI-7.31. They were added to SI-7.53 Revision 7 (PORC approved 02-20-87).

b. A210 and A211 were removed from the plant by ECN 2919 due to the fifth vital battery room modification. These doors were then deleted in SI-7.53. Door A210 will be added back on the same ECN so both SIs were punchlisted and A210 added back to SI-7.53 Revision 7.

c. Door W3 (not W13) was called W4 which was in SI-7.53. The door numbers were changed by ECN 5761. SI-7.53 Revision 7 and SI-7.31 are now correct.

"These SIs are the only place where Tech. Spec. requirements for doors apply, therefore no generic situation exists. The above action will prevent recurrence."

30601-WBN-04

QCP-2.18 was not adequately revised to provide for documentation of door closure mechanism model and type. The line response was:

"Revision 4 to WBN-QCP-2.18 was issued on December 9, 1985, to document traceability of door checks, model and type. Paragraph 6.1.2.5.3 was revised to add "type and model number" to the inspection of the closer. Paragraph 7.4.2.2 was revised to incorporate ER529 which added "Checks (closures)" to the items checked for conformance to drawings. Attachment B was revised to add "Closure (type and model number)" to the items documented on the architectural door inspection sheet. Documentation of traceability does not require door closure model number and type to be recorded on a data sheet. A check list as shown in QCP 2.18 meets all program requirements."

30601-WBN-05

Inspection of installed door checks in accordance with NCR 6306 had not considered all plant fire doors. The line response was:

"It has been determined by DNE (Appendix-R program) that there are 162 fire doors within the WBN unit 1 Auxiliary Building Secondary Containment Enclosure (ABSCE) boundaries which are to close against airflow resulting from differential pressure. NCR 6306 was initiated to complete the inspections of the installed door checks (performed by workplan E5902-1). It was also determined by DNE (NEB) that other plant fire doors are not exposed to the differential pressures that occur inside the plant (Turbine, Office, and Service Building). Although heavy mechanical doors were not included in the scope of NCR 6306, and there is no reason to suspect that improper door checks are installed on these doors, Modifications will initiate an investigation of the door checks on doors A18, A64, A68, A69, A155, A156, A157, A162, A181, A184, A191, and C19 to verify that they meet design requirements. If any are found which do not meet design requirements, a CAQ will be initiated. This investigation will be completed by unit 1 fuel load."

30601-WBN-06

Improper implementation of an FCR had left the model number for two door closure mechanisms in question. The line response was:

"FCR-NP-1125 was initiated to approve substitution of closure mechanisms for doors A143 and A145. The FCR was not accurately reflected on the drawings. Modifications has initiated NCR W-572-P for DNE to evaluate disposition. All remaining tracking will be under this NCR. The corrective action for this CATD will be the disposition of NCR W-572-P."

30601-WBN-07

Standard Operating Procedure (SOP) A2 does not address plant organizational changes. The line response was:

"WBN-SOP-42 is being deleted as outlined in the CAP to CATD 10900-WBN-1[illegible]." 10-2-87

30601-WBN-08

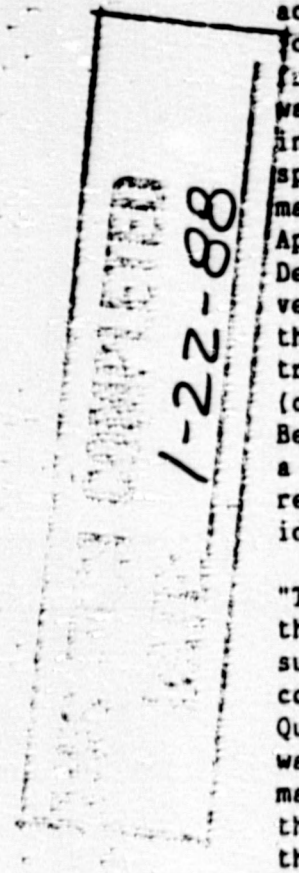
A cross reference to identify substitute door closure mechanisms on design drawings had not been done for the majority of plant fire doors. The line response was:

"Immediate Action Document number 10-OP306, referring to NCR-6306, was initiated on 07/15/86. Since then, NCR-6306 was closed per E. R. Ennis' memorandum to D. M. Lake, dated 09/04/86 (T14 860902 962). ECN 5910 was initiated to revise drawings to reflect actual fire door closers or to replace closers where required in QA buildings. ECN 6342 documents that all door closers shown on drawing series 46W454 (includes all QA and non-QA doors) reflect the "AS-BUILT" conditions as designed and intended by approved shop drawings. These changes accomplished DNE's intent with respect to cross-referencing as described in the NCR disposition and the associated 50.55(e) report. DNE will initiate by April 1, 1987, actions to clarify the associated 50.55(e) report to more accurately reflect the actual corrective actions described above."

30601-WBN-09

Traceability of the type and model of Yale door closure mechanisms was lost when they were removed from their boxes due to no unique identifier being on the hardware. The line response was:

"The 46W454 series drawings list the door and hardware schedule. Doors and hardware were originally ordered to the requirements of TVA Specification 2378 for Hollow Metal Work, Sliding Fire Doors, and Builders' Finish Hardware for the Watts Bar Nuclear Plant, by DNE on contract 75K52-86100-1&2. The specification states "all parts or sections shall be adequately marked to agree with drawings or order lists." This material was inspected and received, originally by the Civil Engineering Unit and since 1982 by the Materials Receiving Unit in accordance with the requirements of the contract. An identification number was required to be on the doors and door frames. Model number and type information for door hardware was on the shipping container but not necessarily on the individual part. Site generated contracts likewise did not specify that each item of door hardware be individually marked. Fire rated doors were completely reworked under the Appendix R program. Revision 4 to WBN-QCP-2.18 effective December 9, 1985 requires the type and model number to be verified on door closures. Thus in a case such as described in this concern the identification numbers would have to be transferred from the shipping container to the door closure (check) before the inspector would accept the installed item. Before a substituted manufacturer and part number could be used a drawing change would be required. Any future site generated requisitions will require all hardware to be uniquely identified."



"The policy in Power Stores in a case such as this is that if this door check was a QA item, before we could accept a substituted manufacturer and part number, we would require a completed Appendix D from the vendor which is approved by Plant Quality Assurance before the contract is finalized. If this was a QA not required door check, we could not accept a manufacturer and part number substitute without the approval of the engineer that originated the Purchase Request. It appears that the Yale door check was identifiable as long as it remained in its original shipping container. This item would be issued in a shipping container, and it would be the responsibility of craft to mark door check when installed."

"Power Stores issues the container which bears the contract number on the box. In the case of QA I, II (which most of these are) the 575 would list the work document (MR, MI, EC, etc.) and contract and the corresponding work document would

list the 575 number. In talking with Eddie Parks of Mechanical Maintenance and Charles Gamble of DNE, we believe we have adequate control to be able to tie the specific item to the drawing. Major substitutions would be covered by an ECN or FCR with the new drawing tied to its contract material. On QA III, there is no requirement to tie the 575 number to the contract."

SQN

Two CATDs were sent to SQN line management for this element. The first CATD (OP-30601-001-SQN) was issued to DNE Architectural personnel to track completion of SCR SQNAB8601 which addresses issues related to differential air pressure effects on fire doors. The response to this CATD from SQN's DNE Architectural personnel was as follows:

"SCR SQNAB8601 will be revised by December 17, 1986 to require revisions to Surveillance Instruction 261 in order to ensure proper door closure operation and adjustment."

The second CATD (30601-SQN-002) was issued to SQN Mechanical Maintenance to track a commitment received from SQN line management. The commitment is as follows:

"SQN will track drawing deviations on 46W454 series hardware schedules under AI-25, "As Constructed" Drawing Deviation, Attachment D, Deviation No. 86DD688. A comparison of existing hardware [DOOR CLOSERS] and key codes to drawing to correct additional discrepancies will be done under this same deviation. P2 classification is 222211062 and 222211134."

BFN

One CATD (OP-30601-BFN-01) was issued to BFN line management to address the following five items: (a) design of fire door closure mechanisms had not considered differential pressure effects, (b) the SI for testing fire doors does not address ventilation conditions under which to test the doors, (c) conformance of fire door closure mechanisms to as-constructed drawings should be verified. (d) problems exist with the documentation for fire door testing, (e) a non-PORC-approved instruction is being used to implement a fire door inspection commitment to NRC. The line response is as follows: