

December 21, 1994

APPLICANT: Tennessee Valley Authority (TVA)

FACILITY: Watts Bar Unit 1

SUBJECT: SUMMARY - DECEMBER 14, 1994 MEETING REGARDING THE FIRE PROTECTION PROGRAM (TAC M63648)

REFERENCE: Meeting notice by P. S. Tam, December 1, 1994

On December 1, 1994, NRC and TVA representatives met at the Watts Bar site, Spring City, Tennessee, to discuss various technical issues regarding the fire protection program. Enclosure 1 is the list of meeting participants.

The meeting consisted of an item-by-item discussion of questions and comments that the staff previously provided TVA (enclosure to the meeting notice), and a handout the staff provided during the meeting (Enclosure 2). TVA's response to the staff's comments and questions were partially documented in TVA's handout material (Enclosure 3), and discussed in detail during the meeting. The staff requested TVA to formally submit responses in the form of supplements and revisions to several reports (safe shutdown analysis, Thermo-Lag and associated circuit analysis, etc.) related to the fire protection program.

TVA stated that it will not be ready for the fire protection audit, which is a needed part of the staff's safety evaluation on the entire fire protection program, until after February 1995. TVA will continue to fine-tune its implementation schedule and will inform the staff of a revised date for the audit.

Original signed by

Peter S. Tam, Senior Project Manager  
Project Directorate II-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-390

- Enclosures: 1. Participants and observers list
- 2. Open issues on post-fire safe shutdown
- 3. TVA handout

cc w/Enclosure 1: See next page

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Enclosure 1

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Enclosures 1, 2, and 3

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P. Tam

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LIST OF PARTICIPANTS AND OBSERVERS  
FIRE PROTECTION MEETING AT WATTS BAR  
SPRING CITY, TENNESSEE  
December 14, 1994

<u>Name</u>	<u>Affiliation</u>
W. H. Baker	TVA/Fire Protection/Operations
Robert D. Briggs	TVA/NE
Charles E. Brush	TVA/NE
Larry Brookey	TVA/Project Management
Pat Carier	TVA/Corporate Licensing
Thomas R. Davis	TVA/Fire Protection/Operations
Richard Deem	NRC/Brookhaven (contractor)
R. D. Hall	TVA/NE
Joseph R. Hubbuch	TVA/Nuclear Assurance
Lee Husted	TVA/Fire Training Academy
Johns P. Jaudon	NRC/Region II
D. Alan Johnson	TVA/Watts Bar Site Licensing
Wade Larson	TVA/EPM (consultant)
Pat Madden	NRC/NRR/Plant Systems Branch
W. H. Miller	NRC/Region II
P. Nicholson	TVA/EPM (consultant)
J. J. Pierce	TVA/Fire Protection/NE
Albert J. Salatica	TVA/Corporate Operations
John G. Sterchi	TVA/Fire Protection/Operations
Ken Sullivan	NRC/Brookhaven (contractor)
Peter Tam	NRC/NRR/Project Directorate II-4

PLANT SYSTEMS BRANCH  
REVIEW OF  
WATTS BAR NUCLEAR PLANT  
POST-FIRE SAFE SHUTDOWN CAPABILITY

OPEN ISSUES

INTRODUCTION

By cover letter dated June 15, 1992, and August 28, 1992, the Tennessee Valley Authority (the applicant) forwarded its post-fire safe shutdown associated circuit analysis for the Watts Bar Nuclear Power Plant (WBN) Unit 1 to the NRC. This analysis was prepared by the applicant to document WBN compliance with certain fire protection requirements contained in Sections III.G, and L of Appendix R to 10 CFR 50. On July 13-14, 1993, Plant System Branch, with technical assistance from Brookhaven National Laboratories, met at Watts Bar with the applicant. At this meeting, the applicant provided additional information related to its post-fire safe shutdown capabilities and associated circuit analysis to the staff for review. As result of its review of this information, by letter of April 6, 1994, the staff requested additional information (RAI) pertaining to WBN fire protection program and post-fire safe shutdown from the the applicant. On July 1, 1994, the applicant submitted their response to this request. The applicant, in its submittal made a commitment to revise its fire protection report to incorporate several of the staff concerns and deferred portions of its response to the post-fire safe shutdown information request. On October 21, 1994 and November 19, 1994, the applicant provided its response to the post-fire safe shutdown information request. Based on the current status of the post-fire safe shutdown capability review, the staff concludes that the applicant's post-fire safe shutdown methodology is incomplete and additional information or further clarification is needed. The following summarizes the areas which are currently considered to be open:

POST-FIRE SAFE SHUTDOWN CAPABILITY

1. The applicant's shutdown methodology controls the primary system pressure by using the pressurizer heaters (if available) or by varying charging flow and level to maintain RCS pressure. The applicant states that analysis and testing have been performed at similar plants which demonstrate that the use of charging flow to varying RCS level and pressure provides an equivalent capability to that provided by the pressurizer heaters. However, the applicant has not provided details regarding the referenced analysis/testing and does not identify specific fire areas where its use may be required.

It is requested that the applicant provide the results of its analysis which demonstrates that the use of charging to control RCS pressure by varying RCS level will provide an equivalent capability to that provided by the pressurizer heaters under postulated fire conditions. In addition, it is requested that the applicant provide a listing of specific fire areas/zones where use of pressurizer heaters may be lost due to fire.

Pending the review of additional information which supports the conclusions stated in the applicant's submittal and identifies the specific fire areas where the alternative approach for RCS pressure control may be required, our review of the applicant's alternative method of establishing RCS pressure control remains open.

2. The shutdown logic developed by TVA identifies a minimum set of systems required to achieve post-fire shutdown conditions in the event of fire in any plant fire area or zone. However, from the review of available information, the specific systems and equipment used to achieve safe shutdown conditions in the event of fire in each area/zone could not be determined. The fire hazard analysis identifies systems affected as a result of fire in each area/zone but does not specifically discuss how safe shutdown would be achieved in the event of fire in each area/zone. In addition, certain operator actions may be required to be performed outside the main control room.

In order to complete the review, a detailed description of the equipment available to achieve shutdown in the event of fire within each fire area or zone is requested.

Pending the review of additional information which defines the equipment available to achieve shutdown in the event of fire within each fire area or zone, and procedures developed to implement the specified shutdown capability for those areas/zones, our evaluation of systems required to achieve post-fire safe shutdown in areas not requiring alternative shutdown capability remains open.

3. A conclusive listing of all required support functions could not be determined from the information provided by the applicant. The TVA Fire Protection Report and associated shutdown logic diagram identifies the onsite electrical supply (diesel generators and distribution system) and environmental control (HVAC components required for hot standby) as required support functions. However, the need for other support systems such as cooling water systems, communications, and instrument air systems while discussed in various equipment logic keys, is not explicitly addressed in the analysis. Additionally, although certain Unit 2 equipment may be required to function during a post-fire shutdown of Unit 1, this equipment, or the fire areas where its use would be required, could not be identified from the information provided. Therefore, a complete listing and description of all support systems required to achieve post-fire safe shutdown is requested.
4. The TVA post-fire safe shutdown analysis, and associated cable interaction studies, have identified a number of fire areas where operator actions to take manual control of equipment may be required to compensate for fire-induced equipment failures. Based on the results of its analyses, TVA performed Calculation No. WBN-OSG-165, "Manual Actions Required for Safe Shutdown Following a Fire". The purpose of this evaluation was to identify manual operator actions required to achieve safe shutdown in the event of fire in any plant area, establish allowable operating times to accomplish these actions, and verify the

feasibility of performance. A review of this calculation identified the following concerns:

- a. Manual actions required for each plant area/zone are not identified. A note in the calculation indicates that this objective was temporarily excluded from the scope of the calculation but will be included in a future revision.
- b. Although a stated objective of the calculation was to determine operator staffing level requirements for the "worst case" fire zone, this evaluation was not performed. Again, a note in the calculation indicates that this evaluation will be performed in a future revision.
- c. The time required to accomplish each manual action appears to be based on an estimate. It is not clear if these estimated times were verified by physical plant walk-downs.
- d. To either establish a shutdown path or compensate for fire damaged cables or equipment, the TVA analysis credits the performance of one or more manual operator actions in areas/zones not requiring an alternative shutdown capability. However, procedures necessary to implement this approach were not available for review. The review of such procedures is required to verify that manual actions have been correctly prioritized and activities are assigned in the proper sequence.
- e. In the evaluation of allowable operating times to accomplish required actions, the TVA calculation defines time T=0 as the time when the reactor is tripped in the main control room. The technical basis for selecting time T=0 as the moment the reactor is tripped, while generally accepted during the review of alternative shutdown capabilities, does not appear to be sufficiently conservative for areas/zones identified in the analysis as satisfying Section III.G.2 of Appendix R. Specifically, there is concern that under actual fire conditions, a significant delay time may precede the time T=0 (reactor trip) assumed in the TVA calculation. For example, prior to this time a fire must first be confirmed to exist; then, based on a number of contributing factors including fire growth rate, fire brigade response/evaluation and indications of fire damage to equipment, an operational decision will be made to trip the reactor. Appendix R assumes immediate damage to circuits/equipment susceptible to fire damage. Therefore, for fires not requiring control room evacuation, it would appear to be more appropriate if the TVA calculations of allowable operating times were based on a time T=0 of fire initiation rather than the time the reactor is tripped. This concern is of particular significance in the evaluation of fire areas requiring manual operator actions to be performed in a short time period (i.e.,  $\leq 20$  minutes) in order to avoid exceeding the established plant safety limits.

- f. The TVA analysis credits the performance of certain operator actions within large fire areas. The boundary between such zones is defined by TVA as a 20 foot wide common area shared by the two bordering fire zones. From the review of available information, it is not clear if the TVA verification of operator access/egress for fires in large areas fully considered the effects of fire (e.g., heat, smoke, toxic gases) and fire suppression activities (e.g., sprinkler actuation, flooding and fire brigade operations) on operator performance in these areas.
- i. From a review of Appendix A to the referenced TVA calculation of required operator actions, it appears that operators may be required to perform actions in the affected fire area/zone. Although numerous instances were identified, one example was found on page 10 of Appendix A. Specifically, the information provided on this table indicates that in the event of fire in Fire Zone 713-A7 a manual operator action will be required. However, the Control Location (i.e., physical location of the controlled component) for that action is also shown as Fire Zone 713-A7.
- g. The only operator action normally credited prior to control room evacuation is a reactor trip (scram). However, the TVA Fire Protection Report for Watts Bar credits two actions prior to control room evacuation; Reactor Trip and Reactor Coolant Pump trip. In the event of fire in the control building an immediate trip of the Reactor Coolant Pumps is necessary to prevent overcooling caused by a spurious actuation of pressurizer spray valves. The feasibility and adequacy of the proposed TVA approach for preventing a spurious actuation of pressurizer spray valves requires further on-site review.

It is recommended that the applicant address the above concerns. Therefore, the review of post-fire safe shutdown manual operator actions remains open.

- 5. The applicant's has not completed its post-fire safe shutdown operating procedures or instructions. Additionally, manpower requirements to implement these procedures and instructions have not been fully established. Therefore, it is recommended that the adequacy of the applicant's safe shutdown procedures and manpower requirements remains open.
- 6. No repair activities (e.g., lifting/cutting leads, installing jumpers, and fuse replacement) are required to achieve and maintain hot standby. To achieve cold shutdown conditions, TVA calculation WBN-OSG-165, "Manual Actions Required for Safe Shutdown Following a Fire" indicates that repairs may be required as a result of fire in certain fire areas/zones. However, specific fire areas requiring cold shutdown repairs were not identified, and repair procedures were not included in the TVA submittal. Additionally, the Fire protection Report does not provide any discussion of manpower or materials required to implement these repairs.

It is requested that the applicant address the above concerns. Therefore, the adequacy of repairs required to achieve cold shutdown conditions remains open.

7. For Type I (Common Power Source) associated circuits, TVA has performed an evaluation to identify all circuits supplied from a power source (i.e., switchgear, MCCs, and load centers) that also powers a circuit of

equipment required for post-fire safe shutdown. For the identified circuits, the coordination of electrical protection devices (e.g. fuse, circuit breakers or relays) was verified to ensure that a fire induced fault on a branch circuit of a required supply will be cleared by at least one branch circuit protective device before the fault current could propagate to cause a trip of any upstream feeder breaker to the supply.

The evaluation of Type I associated circuits presented in the applicant's submittal was not found to include a discussion of multiple high impedance faults that may be initiated as a result of fire. A review of the applicants Detailed Design Criteria WB-DC-30-13, "10 CFR 50, Appendix R, Type I, II, and III Circuits", found it to indicate that an evaluation of High Impedance Faults (HIF) was performed for each required power source. However, this evaluation does not appear to be sufficiently conservative, to the extent that it appears to limit the number of potential faults that may occur as a result of fire to one. In Generic Letter 86-10 response to Question 5.3.8, the staff states that to meet the separation requirements of Section III.G.2 and III.G.3 of Appendix R, simultaneous high impedance faults (below the trip point for the breaker on each individual circuit) for all associated circuits located in the fire area should be considered in the evaluation of the safe shutdown capability.

Based on the above, the applicant does not appear to have sufficient technical basis to support its assumption that only one HIF will occur as a result of fire on loads of a power source required for safe shutdown. It is requested that the applicant provide its technical basis for its position on that only one HIF will occur as a result of fire. Therefore, the adequacy of the applicant's Type I associated circuits analysis remains open.

8. Type II (Spurious Actuation) circuits were identified by TVA during the development of the shutdown logic and associated required cable lists. During this phase of the analysis, components that must be prevented from spuriously operating were identified. These components were then listed in the shutdown logic and associated equipment keys. TVA then evaluated the cable separation and protection provided for this equipment in the same manner as required circuits. Circuits which could cause undesirable spurious operation were identified and evaluated for potential fire damage. Additionally, if circuits for redundant components could be affected by a common fire, they were evaluated concurrently and corrective action identified as needed.

From the review of the available information, it could not be determined if the applicant's analysis of Type II circuits considered cable-to-cable faults (hot-shorts) as a credible failure mode. Therefore, this item remain open.

## **AGENDA**

### **TVA/NRC MEETING WBN FIRE PROTECTION PROGRAM DECEMBER 14, 1994**

- **OPENING REMARKS** **T. R. DAVIS**
- **RESPONSE TO DISCUSSION ITEMS** **T. R. DAVIS/J. J. PIERCE**
- **CLOSING REMARKS** **T. R. DAVIS**

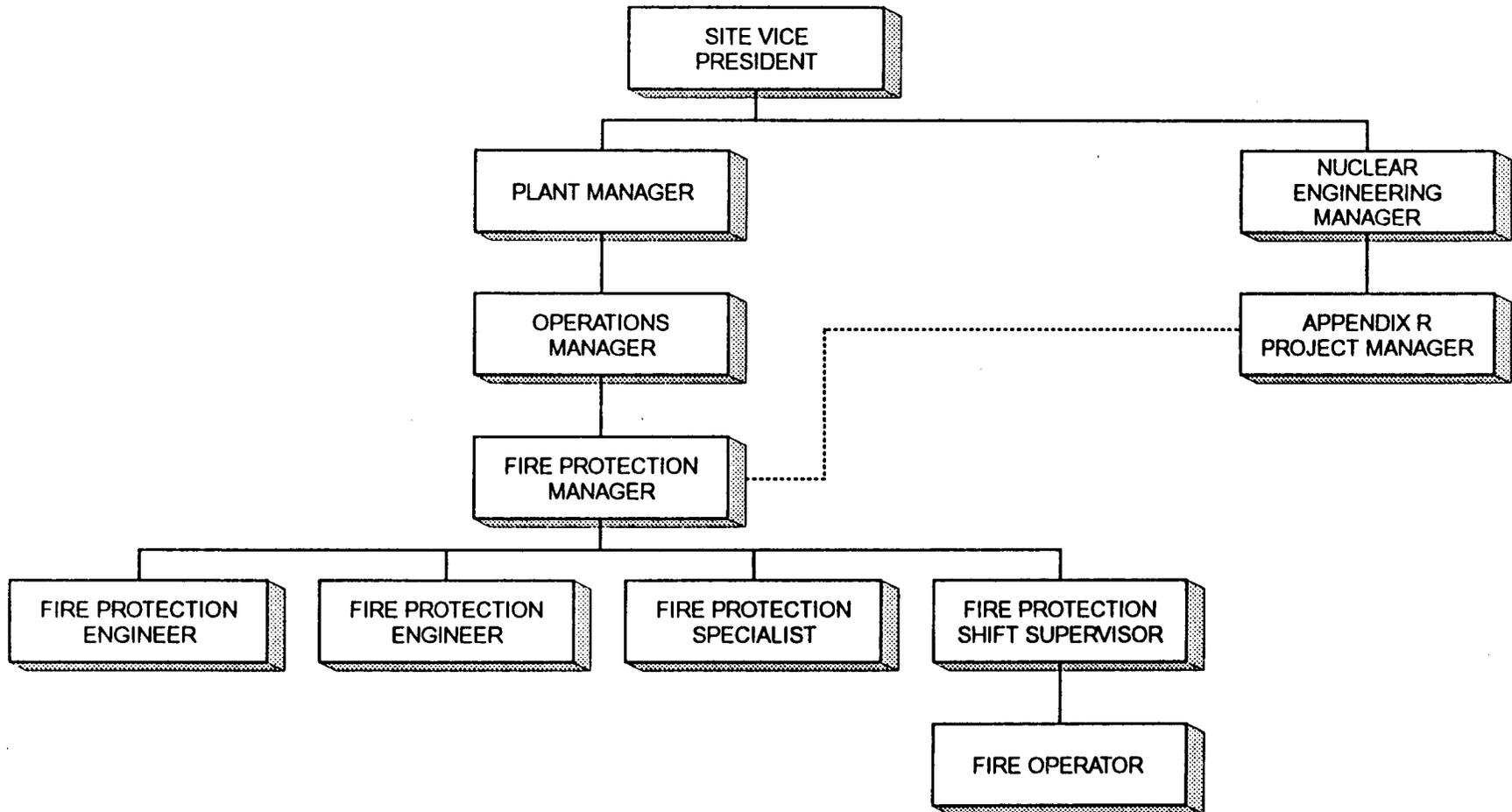
## **OPENING REMARKS**

- **INTRODUCTIONS/ORGANIZATION**
  
- **REBASELINED FIRE PROTECTION PROGRAM**
  - **10 CFR 50 Appendix R Sections III. G, J, O, AND L**
  - **BTP 9.5-1 Appendix A**
  - **Composite Fire Protection Report (FPR) for long-term compliance**
  
- **COMPREHENSIVE REVIEW OF FIRE BARRIERS**
  - **Industry leader for Thermo-Lag testing**
  - **Penetration seals**
  - **Fire doors**
  
- **COMPREHENSIVE REVIEW OF FIRE SUPPRESSION SYSTEMS**

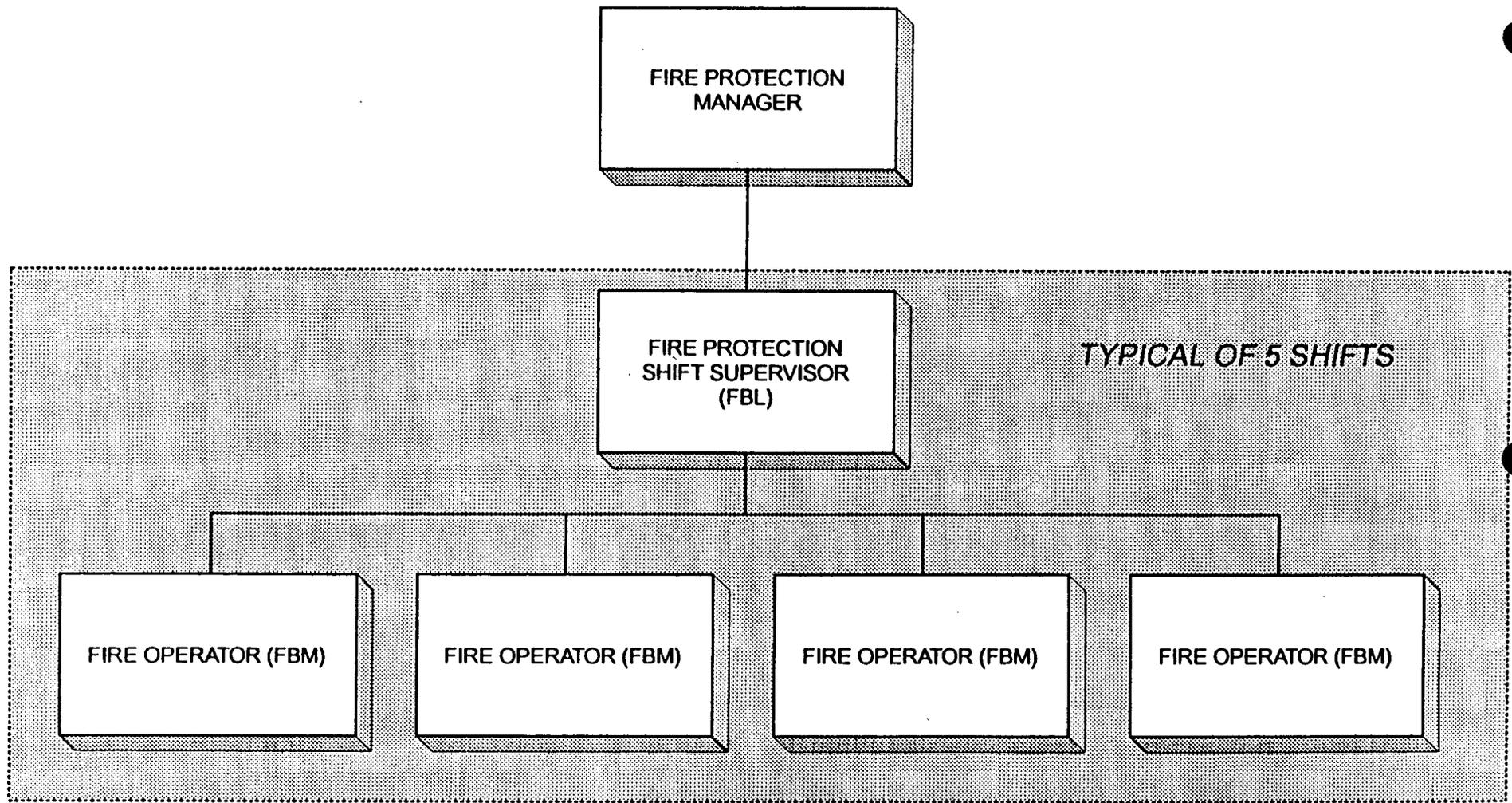
## **OPENING REMARKS (CONTINUED)**

- **COMPLETED SAFE SHUTDOWN ANALYSIS USING A FUNCTIONAL APPROACH**
  - **Evaluated safe shutdown functions/equipment/cables**
  - **Physical walkdowns**
  - **Cable separation analysis for each safe shutdown function**
  - **SSD procedures**
  
- **CURRENT PROGRAM INITIATIVES**
  - **Safe shutdown analysis using a fire area/zone approach**
  - **Minimize interactions**
  - **Simplify long-term program maintenance**
  
- **TRANSITION TO OPERATIONAL READINESS**

# WBN FIRE PROTECTION ORGANIZATION



# WBN FIRE BRIGADE ORGANIZATION



## **A.1 - CONTINUOUS FIRE WATCH**

- **WBN APPLICATION PROVIDES AN EFFECTIVE LEVEL OF COVERAGE**
  - **Improved level of attentiveness over stationary fire watch**
  - **Detect and resolve potential fire hazards**
  - **Promptly identify fire**
  - **Promptly notify fire brigade**
  
- **FIRE WATCH DEFINITION CONSISTENT WITH OTHER FACILITIES**
  - **Consistent intent - slightly different terminology**
  - **Consistent application - plants are similarly designed**
  - **Reasonable margin for contingencies (5 minutes)**

## **A.1 - CONTINUOUS FIRE WATCH (CONTINUED)**

- **ROUTE SIZING**

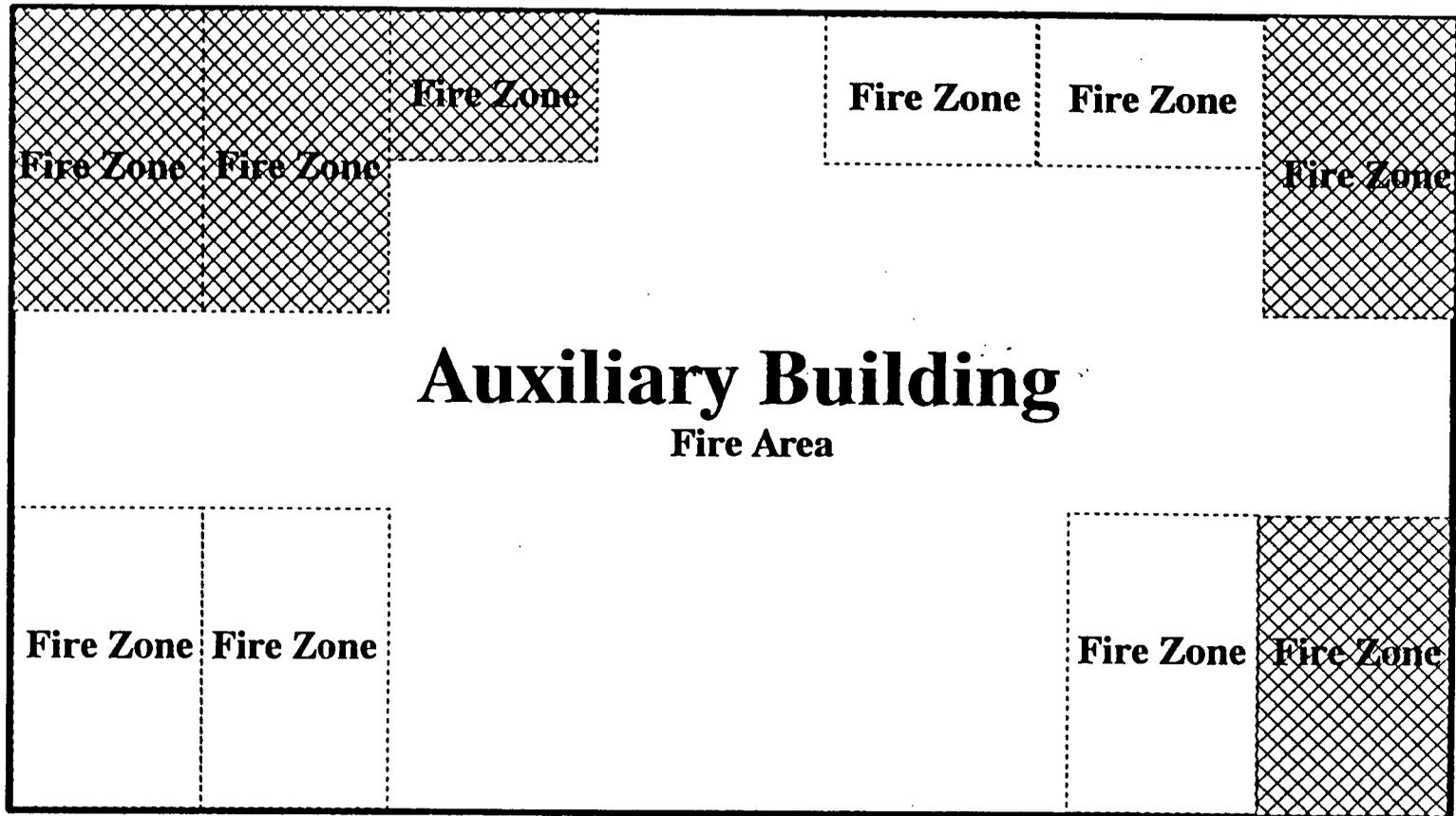
- **Requires Fire Protection Manager approval**
- **Based on ability to achieve desired coverage within 15 minutes**
- **Allowances for normal and abnormal plant conditions**

- **TRAINING**

- **Fire watch responsibilities under development (FPI-180) - to be completed by February 15, 1995**
- **Approved TVA training procedure (TRN-32)**
- **Training provided using lesson plan (FPT-313.001)**

# SQN

## Large Fire Area with Multiple Fire Zones

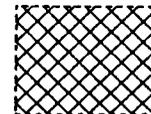


Fire Area

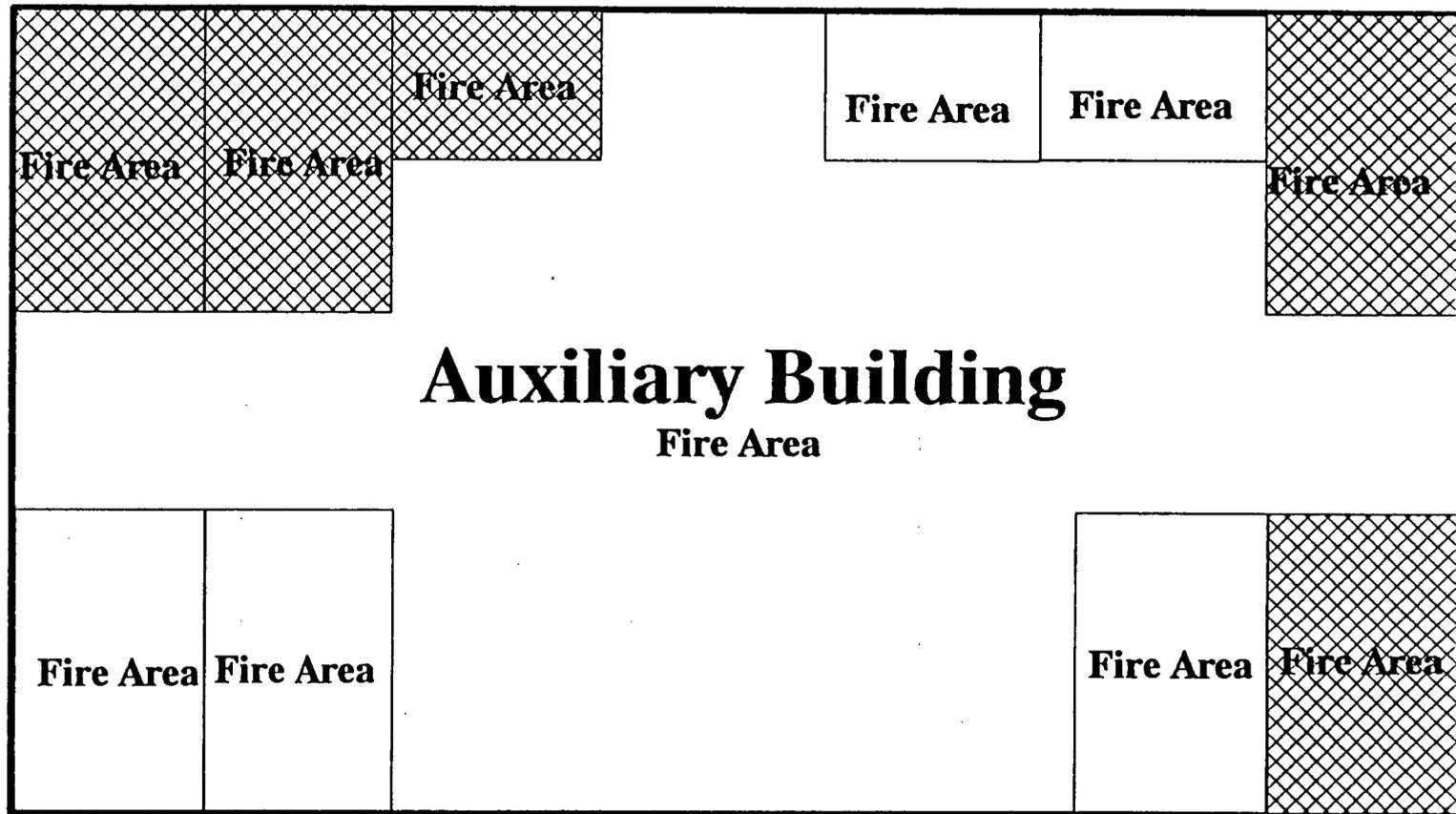
Fire Zone



Fire Watch covers every 15 minutes



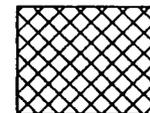
# WBN Large Building with Multiple Fire Areas



Fire Area



Fire Watch covers every 15 minutes



## A.2 - TEST/INSPECTION FREQUENCY

- **USE THE SAME ADMINISTRATIVE CONTROLS FOR IMPLEMENTING FIRE PROTECTION OPERATING REQUIREMENTS AND TECHNICAL SPECIFICATION SURVEILLANCES - SSP-8.02, "SURVEILLANCE PROGRAM"**

	Requirements of SSP-8.02	Technical Specification Requirements
<b>Scheduling Frequency for a Monthly Test</b>	<b>28 Days</b>	<b>31 Days</b>
<b>Scheduled Performance Date</b>	<b>Last Scheduled Performance Date + 28 Days</b>	<b>Last Scheduled Performance Date + 31 Days</b>
<b>Management Alert Method ( For adherence to the Scheduled Performance Date)</b>	<ol style="list-style-type: none"> <li>1. Monthly schedule</li> <li>2. Weekly report of surveillances due</li> <li>3. Daily report of surveillances that have not met their Scheduled Performance Date</li> </ol>	<b>N/A</b>
<b>Normal Test Frequency Tolerance</b>	<b>Scheduled Performance Date + 5 Days</b>	<b>N/A</b>
<b>Maximum Test Frequency Tolerance</b>	<b>NRC Test Frequency of 31 Days x 1.25</b>	<b>Test Frequency of 31 Days x 1.25</b>

## **A.3 - SMOKE CONTROL**

- **SMOKE CONTROL METHODOLOGY DESCRIBED IN PRE-FIRE PLANS AND PROCEDURES**
- **SMOKE REMOVAL EQUIPMENT READILY AVAILABLE**
- **PRE-FIRE PLANS UNDER DEVELOPMENT - TO BE COMPLETE BY JANUARY 1995**
- **FPI-0131, "SMOKE REMOVAL", UNDER DEVELOPMENT - TO BE COMPLETE BY FEBRUARY 15, 1995**
- **PROCEDURES AND PLANS TO BE MADE AVAILABLE FOR NRC REVIEW**

## **A.4 - COMBUSTIBLE CONTROL PROGRAM**

- **FIRE PROTECTION REPORT DESCRIBES THE OVERALL ADMINISTRATIVE CONTROLS FOR COMBUSTIBLES**
- **LEVEL OF DETAIL SUFFICIENT TO ESTABLISH THE PROGRAMMATIC CONTROLS WITHOUT UNNECESSARY DETAIL**
- **IMPLEMENTING PROCEDURES UNDER DEVELOPMENT - TO BE COMPLETE BY FEBRUARY 15, 1995**
- **PROCEDURES TO BE MADE AVAILABLE FOR NRC REVIEW**

## **A.5 - FIRE PROTECTION WATER SUPPLY**

- **FIRE PROTECTION SYSTEM INCLUDED IN COMPREHENSIVE WBN MIC MANAGEMENT PROGRAM**
- **SIGNIFICANT SQN/BFN PROBLEMS HAVE NOT BEEN SEEN AT WBN**
- **NON-OXIDIZING BIOCIDES USED FOR CHEMICAL TREATMENT**
  - **Recently approved for use in Tennessee**
  - **Prevents growth of new MIC nodules**
  - **Extended active period**
  - **Quarterly flush**
- **EXISTING "UNDER-DEPOSIT" MIC MAY RESULT IN SMALL PIN-HOLE LEAKS**
  - **Does not significantly impact structural integrity of piping**
  - **Repairs made under existing WBN maintenance program**

## **A.5 - FIRE PROTECTION WATER SUPPLY (CONTINUED)**

- **FIRE PROTECTION SYSTEM TEST PROGRAM**
  - **System flow and pressure periodically evaluated**
  - **Identify system maintenance requirements**
  
- **ROUTINELY EVALUATE CONDITION OF WBN PIPING PER APPROVED PROGRAM**
  
- **AS WITH SQN, TVA WILL ADDRESS ALTERNATIVE RESOLUTION METHODS WITH NRC IF/WHEN NEED FOR SUBSTANTIAL MAINTENANCE DEVELOPS**

## **A.6 - EQUIVALENT FIRE BARRIER**

- **LATEST FIRE PROTECTION REPORT SUBMITTAL INCLUDES EXPANDED DESCRIPTION (SECTION II.12.10)**
  
- **BOUNDED BY UL TESTED CONFIGURATIONS**
  - **UL Design U904, U905, U906, and U907**
  
  - **Fire Protection Handbook**

## **A.7 - INTERNAL CONDUIT SEALS**

- **TECHNICAL ADEQUACY FOR APPLICATION OF INTERNAL CONDUIT SEALS SHOWN IN TESTING**
  - **Wisconsin Electric testing**
  - **Additional TVA testing**
  
- **WISCONSIN ELECTRIC AND TVA TESTING PERFORMED WITH CONDUITS IN VERTICAL CONFIGURATIONS**
  
- **TVA TEST RESULTS AVAILABLE FOR REVIEW**

## **A.8 - ALTERNATIVE COMPENSATORY MEASURES**

- **FIRE PROTECTION REPORT RECENTLY REVISED TO EXPAND DISCUSSION OF ALTERNATIVE COMPENSATORY MEASURES**
- **FLEXIBILITY TO ACCOMMODATE UNUSUAL SITUATIONS**
  - **Hardware options available to compensate for original impairment where practical (e.g., alternate detection methods, alternate suppression means)**
  - **CCTV coverage by trained personnel**
  - **Appropriate options for personnel safety, ALARA, accessibility, restoration of original design intent etc.**
- **IMPLEMENTING PROCEDURES TO BE DEVELOPED DESCRIBING SPECIFIC APPLICATIONS - TO BE COMPLETED BY FEBRUARY 15, 1995**
- **APPLICATIONS APPROVED BY FIRE PROTECTION MANAGER**

## **B.1 - POST-FIRE SAFE SHUTDOWN**

- **FIRE PROTECTION REPORT**
  - **Fire protection features identified for each fire area/zone**
  
- **TVA REPLY TO REQUEST FOR ADDITIONAL INFORMATION DATED NOVEMBER 18, 1994 - LIST OF AVAILABLE SAFE SHUTDOWN EQUIPMENT BY FIRE ZONE. LISTS:**
  - **Train and major equipment**
  - **Abnormal main control room operator actions**
  - **Local manual operator actions with allowable time**
  - **Potential need for cold shutdown repairs**

## **B.1 - POST-FIRE SAFE SHUTDOWN (CONTINUED)**

- **ACTIVITIES IN PROGRESS**
  - **Prepare compliance summary table**
  - **Provide manual operator action performance location for each fire area/zone**
  - **Provide cold shutdown repair summary**
  
- **SAFE SHUTDOWN KEYS**
  - **WBN-OSG4-031 provides verbal description, equipment list, and redundancy**
  - **Available for NRC review**

## **C.1, E.2 - INOPERABLE SUPPRESSION SYSTEM COMPENSATORY MEASURES**

- **WESTINGHOUSE STANDARD TECHNICAL SPECIFICATIONS**
  - **Areas where redundant systems or components could be damaged - continuous fire watch with backup fire suppression equipment**
  - **Areas having no redundant systems or components - hourly fire watch**
- **USE CONTINUOUS FIRE WATCH IN LOCATIONS WHERE REDUNDANT SYSTEMS OR COMPONENTS COULD BE DAMAGED**
- **USE CONTINUOUS FIRE WATCH IN LOCATIONS WHERE ENHANCED SPRINKLER SYSTEMS USED**
- **USE HOURLY FIRE WATCH IN LOCATIONS HAVING NO REDUNDANT SYSTEMS OR COMPONENTS**

## **D.1 - THERMO-LAG TESTING**

- **PHASE 2 TESTING**

- **1-Hour wrap seismic testing complete**
- **1-Hour wrap fire tests complete**
- **1-Hour wrap ampacity testing ongoing - scheduled to be complete by mid-January 1995**
- **3-Hour wrap fire and ampacity testing ongoing - scheduled to be complete by mid-January 1995**

- **PHASE 2 TEST REPORT SUBMITTAL**

- **1-Hour wrap seismic test report - submitted**
- **1-Hour wrap fire test reports - January 1995**
- **1-Hour wrap ampacity test reports - February 1995**
- **3-Hour wrap fire and ampacity test reports - April 1995**

## **E.1 - PLANT EQUIPMENT USED FOR SAFE SHUTDOWN**

- **REVIEWING EQUIPMENT NEEDED FOR SAFE SHUTDOWN TO DETERMINE IF INCLUDED IN WBN MERITS TECHNICAL SPECIFICATIONS (TS) OR TECHNICAL REQUIREMENTS MANUAL (TRM)**
  - **Specifically in TS/TRM**
  - **Support component for item in TS/TRM**
  
- **REVIEW ONGOING WHILE DEVELOPMENT OF WBN SURVEILLANCE INSTRUCTIONS IN PROGRESS**
  
- **EQUIPMENT NOT COVERED BY TS/TRM, IF ANY, WILL BE INCLUDED IN FIRE PROTECTION REPORT**

WATTS BAR NUCLEAR PLANT

cc:

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The Honorable Robert Aikman  
County Executive  
Rhea County Courthouse  
Dayton, TN 37321

The Honorable Garland Lanksford  
County Executive  
Meigs County Courthouse  
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