



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

APR 19 2004

10 CFR 50.71

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

In the Matter of ) Docket No. 50-390  
Tennessee Valley Authority )

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - UPDATE TO THE WBN FIRE  
PROTECTION REPORT (FPR)

In accordance with 10 CFR 50.71, please find enclosed an update to the WBN FPR. This update includes FPR, Revisions 22 through 27 which have been made since the last update dated September 19, 2002. In accordance with Regulatory Issue Summary (RIS) 2001-05 dated January 25, 2001, one copy of the enclosure is being provided to the Document Control Desk.

There are no new regulatory commitments made by this submittal. If you have any questions concerning this matter, please contact me at (423) 365-1824.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed on 19th day of April 2004.

Sincerely,

P. D. Pace  
Manager, Licensing  
and Industry Affairs

Enclosure  
cc: See page 2

A006

U.S. Nuclear Regulatory Commission

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APR 19 2004

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**FILING INSTRUCTIONS FOR  
WATTS BAR  
FIRE PROTECTION REPORT, REVISIONS 22, 23, 24, 25, 26 and 27**

<b>Remove</b>	<b>Insert</b>
Fire Protection Cover Title Page, Revision 21	Fire Protection Cover Title Page, Revision 27
-----	Revision Log R22 through R27
Pages i through xv	Pages i through xv
<b>Part I</b> Pages I-5 through I-8 Pages I-10 through I-16	<b>Part I</b> Pages I-5 through I-8 Pages I-10 through I-16
<b>Part II</b> Pages II-20 through II-21 Pages II-25 through II-26 Page II-46 Pages II-51 through II-52 Page II-55 Page II-57 Page II-59 Page II-72 Page II-76 Page II-80 Pages II-82 through II-83 Page II-88 Pages II-96 through II-119 Figures II-1, II-3, II-13, II-23, II-24	<b>Part II</b> Pages II-20 through II-21 Pages II-25 through II-26 Page II-46 Pages II-51 through II-52 Page II-55 Page II-57 Page II-59 Page II-72 Page II-76 Page II-80 Pages II-82 through II-83 Page II-88 Pages II-96 through II-119 Figures II-1, II-3, II-13, II-23, II-24
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**FILING INSTRUCTIONS FOR  
WATTS BAR  
FIRE PROTECTION REPORT, REVISIONS 22, 23, 24, 25, 26 and 27**

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# TVAN FIRE PROTECTION REPORT APPROVAL PAGE

## NUCLEAR PLANT FIRE PROTECTION REPORT

Revision No. 27  
Effective Date:

Revision Sponsor:

SE Mech

Organization

Ernest T. Haston

Name

### Change Approval

REF #.	Organization	Action Needed?	Type of Action	Impacts (see note 1)	Action Complete (Name / Signature)	Date
1		N/A	Change Initiator	N/A	Ernest T. Haston /	N/A
2	SE - M/N Program Owner	Yes	T & I Reviews <sup>3</sup>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ernest T. Haston <i>Ernest T. Haston</i>	03/15/04
3	SE - EE Program Owner	Yes	T & I Reviews <sup>2</sup>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Julio Gomez <i>Julio Gomez</i>	3/29/04
4	OPS Procedures	Yes	T & I Reviews <sup>2</sup>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
5	OPS Fire Protection	Yes	T & I Reviews <sup>2</sup>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Paul R. Bumgardner <i>Paul R. Bumgardner</i>	3/25/04
6	OPS FP System Engineer	Yes	T & I Reviews <sup>2</sup>	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	John G. Sterchi <i>John G. Sterchi</i>	3/25/04
7	OPS FP System Engineer <i>Sys 228</i>	Note 4	T & I Reviews <sup>2</sup>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	W. H. Baker <i>W. H. Baker</i>	3/25/04
8		Note 3	Impact Review	Yes <input type="checkbox"/> No <input type="checkbox"/>		
9	Plant Manager	Yes	Approval	N/A	Larry S. Bryant <i>Larry S. Bryant</i>	3/29/04

- Record any Impacts of the FPR change on form FPDP-3-2, TVAN FPR Revision Impacts
- Technical review of the FPR change and also impact review if change is outside the design change process.
- Additional Impact reviews - as determined needed by sponsor or technical reviewers. N/A rows not needed.
- If more than one system/system engineer is affected by the change.

Title: WBN Fire Protection Report		REVISION LOG
Revision No.	DESCRIPTION OF REVISION	DATE APPROVED
20	<p>This revision to the Fire Protection Report adds a deviation to address minor leakage around the RCP oil collection System, and is part of the corrective action for PER 01-012111.</p> <p>The License Condition Impact Evaluation for this revision follows the Revision Log for Rev. 20.</p> <p>This change revises the Effective Page Listing and additional pages as noted below:</p> <p>Pages added: VII-20 through VII-22  Pages revised: VII-1, IX-20  Pages renumbered: VII-23 through VII-58</p>	3-22-2002
21	<p>This revision to the Fire Protection Report removes the requirement to perform a periodic functional test of door WBN-0-DOOR 410-A036, which was permanently locked closed as part of the improved Security Plan.</p> <p>The License Condition Impact Evaluation for this revision follows the revision log for Rev. 21.</p> <p>This change revises the Effective Page Listing and additional pages as noted below:</p> <p>Pages Added: none  Pages Revised: II-129, II-132  Pages Renumbered: none</p>	8-29-2002
22	<p>This revision to the Fire Protection Report adds OR-14.5.3 and its associated bases information, removes duplicate listings for 1-FCV-1-275 and -277 from Table 14.10, and corrects the format in OR-14.3.1.b.2 for readability.</p> <p>The Licensing Condition Impact Evaluation for this revision follows the revision log for Rev. 22.</p> <p>This change revises the title for sections associated with Part II, Section 14.10. This title has been revised to add "Fire" to make it more descriptive.</p> <p>This change revises the Effective Page Listing and additional pages as noted below:</p> <p>Pages Added: II-96  Pages Revised: iv, II-46, II-55, II-57, II-59, II-110, II-112, II-140 to II-143  Pages Renumbered: II-97 through II-143</p>	12-6-2002
23	<p>This revision of the Fire Protection Report notes the installation of an anti-static mat at Panel 1-M-13.</p> <p>The License Condition Impact Evaluation for this revision follows the revision log for Rev. 23.</p> <p>This change revises the Effective Page Listing and additional pages as noted below:</p> <p>Pages Added: None  Pages Revised: xii, VIII-19  Pages Renumbered: None</p>	2-3-2003

Title: WBN Fire Protection Report		REVISION LOG
Revision No.	DESCRIPTION OF REVISION	DATE APPROVED
24	<p>This revision of the Fire Protection Report corrects discrepancies between the ORs section in 14.1.4.a, 14.3.1.a, and 14.3.1.b.1 and the Basis for these ORs. Modified the B.14.3.1 for the reference to TS SQN TS 3.3.3.8, which has been deleted. Corrected elev. For PASF in Table 14.1. Corrected UNID FOR 1-PCV-68-340B in TIR item 14.10.f.</p> <p>The License Condition Impact Evaluation for this revision follows the revision log for Rev. 24.</p> <p>This change revises the Effective Page Listing and additional pages as noted below:</p> <p>Pages Added: None  Pages Revised: x, II-55, II-72, II-76, II-88, II-118  Pages Renumbered: None</p>	5-8-2003
25	<p>This revision of the Fire Protection Report, Part II provides clarification of the requirements associated with OR-14.2.1.c.</p> <p>Pages Added: None  Pages Revised: II-51, II-80  Pages Renumbered: None</p>	9-18-2003
26	<p>This revision of the Fire Protection Report notes the disconnection of the Unit 2 120V AC Vital Inverters (2-INV-235-1, -2, -3, -4) and the installation of the 480V AC Vital Disconnect Panels (0-PNL-236-1-S, -2-S, -3-S, -4-S).</p> <p>The License Condition Impact Evaluation for this revision follows the Revision Log for Rev. 26.</p> <p>This change revises pages as noted below:  Pages Added: None  Pages Revised: Table of Contents (pages i through xiv), III-20, III-56  Pages Renumbered: None</p>	3-2-2004
27	<p>PER 03-001902-000 (6666) identified that the Fire Protection Report (FPR) in Part I, page 1-7 and Part VI, pages VI-166 and VI-169, indicates the Unit 1 North and South Steam Valve Rooms have thermal detection. This detection was abandoned in place by DCN M-38746. The FPR is being revised to delete the thermal detection in Unit 1 North and South Steam Valve Rooms.</p> <p>PER 03-003890-000 (6869) identified that some discrepancies between the room listings in the FPR Table 1-1 and Part VI Table of Contents (TOC). Only Part VI TOC is being revised to correct the room listings to agree with Table 1-1. Based on this review, the FPR Table 1-1 was revised to correct the Fire Area name for Unit 2, and to add Fire Area Duct Banks.</p> <p>PER 04-000373-000 (12976) identified that during performance of an inspection, the blast doors to Unit 2 Reactor Building were ajar. Engineering evaluation for these doors found that the detection system should be included in Part II, Table 14.1</p>	4-7-2004



Title: WBN Fire Protection Report		REVISION LOG
Revision No.	DESCRIPTION OF REVISION	DATE APPROVED
27 (cont'd)	<p>PER 03-014910-000 (8497) identified that Revision 3 to FPDP-3, Management Of The Fire Protection Report removed the requirement for PORC review of the Fire Protection Report (FPR), however FPR Part II, section 8.1 a. which states that PORC reviews changes to the FPR was not revised. This section has been revised to agree with FPDP-3 and regulatory guidance.</p> <p>PER 03-020146-000 (12878) identified that valve 0-PCV-26-18 controls the pressure on System 26 when an electric motor driven fire pump(s) is running. Due to problems with 0-PCV-26-18 failing to control pressure properly, 0-PCV-26-18 was isolated. To prevent the automatic starting of the electric motor driven fire pumps and relying on the pumps' relief valves to control pressure, the FPS circuit was defeated without entering Operation Requirement (OR) 14.2.3. The defeat of the FPS circuit without entry into an OR is allowed by the FPR, as specified in the bases B.14.2 to support testing. This same justification was used to defeat the FPS circuit for this maintenance issue. NCV 50-390/2003-05-01. For completeness and clarity, Section 14.2.8 and B14.2.8 has been added to allow for maintenance of the motor driven fire pumps.</p> <p>In addition to the PERs, (1) FPR in Part II, page II-109, "Bases – Testing and Inspection Requirements (TIR) Emergency Battery Lighting Units" contained a reference to the vendor recommendation and NFPA consensus standard 101 criteria for frequency. Reference to NFPA was deleted. (2) Section 9.1 and 9.5 were revised to add a response within the WBN Reservation to protect offsite power as another example of an emergency that would prevent the brigade from being available onsite. (3) Section 10.0 was revised to reference site administrative procedures instead of fire protection engineer.</p> <p>eCAP PER numbers are in parenthesis.</p> <p>The License Condition Impact Evaluation for this revision follows the revision log for Revision 27.</p> <p>This change revises the Effective Page Listing and additional pages as noted below:</p> <p>Pages Added: I-16, VI-x - VI-xii  Pages Revised: x, I-5 – I-8, I-10, I-12 – I-15, II-20, II-25, II-21, II-26, II-52, II-82, II-83, II-109, II-119, III-58, III-59, III-62, III-71, VI-i – VI-ix, VI-5, VI-13, VI-30, VI-32, VI-55, VI-149, VI-159, VI-166, VI-169, VI-453  Pages Deleted: None</p>	

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**FIRE PROTECTION REPORT  
LIST OF ACRONYMS**

AB	Auxiliary Building
ABGTS	Auxiliary Building Gas Treatment System
ACR	Auxiliary Control Room
ADGB	Additional Diesel Generator Building
AFFF	Aqueous Film Forming Foam
AFW	Auxiliary Feedwater
AHJ	Authority Having Jurisdiction
ALARA	As Low As Reasonably Achievable
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AV	Analysis Volume
BIT	Boron Injection Tank
BTP	Branch Technical Position
BTU	British Thermal Unit
BWR	Boiling Water Reactor
CB	Control Building
CCP	Centrifugal Charging Pump
CCRS	Computerized Cable Routing System
CCS	Component Cooling System
CCTV	Closed Circuit Television
CCZ	Combustible Control Zone
CDWE	Condensate Demineralizer Waste Evaporator
CI	Containment Isolation
CIV	Containment Isolation Valve
CPU	Central Processor Unit
CRDM	Control Rod Drive Mechanism
CRT	Cathode Ray Tube
CST	Condensate Storage Tank
CSST	Common Station Service Transformers
CT	Current Transformer
CVCS	Chemical and Volume Control System
DBA	Design Basis Accident
DBE	Design Basis Event
DCN	Design Change Notice
DGB	Diesel Generator Building
ECCS	Emergency Core Cooling System
EDGB	Emergency Diesel Generator Building
EGTS	Emergency Gas Treatment System
EPS	Emergency Power System
ERCW	Essential Raw Cooling Water
ERFBS	Electrical Raceway Fire Barrier System
ETL	Electro-Thermo Link
FD	Fire Department



**FIRE PROTECTION REPORT  
LIST OF ACRONYMS**

FHA	Fire Hazards Analysis
FP	Fire Protection
FPP	Fire Protection Program
FPR	Fire Protection Report
FSAR	Final Safety Analysis Report
FSB	Field Services Building
FSSD	Fire Safe Shutdown
GDC	General Design Criteria
HEPA	High Efficiency Particulate Absorption
HPFP	High Pressure Fire Protection
HVAC	Heating, Ventilation and Air-Conditioning
IPEEE	Individual Plant Examination for External Events
IPS	Intake Pumping Station
LCC	Lower Compartment Cooling
LOCA	Loss of Coolant Accident
MCC	Motor Control Center
MCR	Main Control Room
MOV	Motor Operated Valve
NELPIA	Nuclear Energy Liability and Property Insurance Agency
NER	Nuclear Experience Review
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NRC	Nuclear Regulatory Commission
NSRB	Nuclear Safety Review Board
OR	Operating Requirement
OS&Y	Outside Screw and Yoke
OSHA	Occupational Safety and Health Administration
PIV	Post Indicator Valve
PORC	Plant Operations Review Committee
PORV	Power-Operated Relief Valve
PRT	Pressurizer Relief Tank
PWR	Pressurized Water Reactor
QA	Quality Assurance
RADCON	Radiological Control
RB	Reactor Building
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RCW	Raw Cooling Water
RHR	Residual Heat Removal
RPS	Reactor Protection System
RSW	Raw Service Water
RWST	Refueling Water Storage Tank
SBPB	Security Backup Power Building
SER	Safety Evaluation Report

**FIRE PROTECTION REPORT  
LIST OF ACRONYMS**

SG	Steam Generator
SI	Safety Injection
SSEL	Safe Shutdown Equipment List
TB	Turbine Building
TDAFWP	Turbine Driven Auxiliary Feedwater Pump
TIR	Testing and Inspection Requirements
TSC	Technical Support Center
TSOB	Temporary Storage and Office Building
UL	Underwriters' Laboratories
VCT	Volume Control Tank

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**TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE**

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number in Section VII	Evaluation Number in Section VII	CSD Repairs req'd in any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 1:</b>									
674.0-A1 Waste Holdup Tank Room	No	No	No	No	< 5 minutes		3.1		
674.0-A2 Waste Evap. Feed Pump Room	No	No	No	No	< 5 minutes		3.1		
676.0-A1 Corridor	Yes	Yes, Full	No	3 hour	< 10 minutes	2.6	3.1	Yes	Yes
676.0-A2 Holdup Tank Room A	No	No	No	No	< 5 minutes		3.1		
676.0-A3 Holdup Tank Room B	No	No	No	No	< 5 minutes	2.6	3.1		
676.0-A4 Floor Drain Coll. Pump/Filtr Room	No	No	No	No	< 5 minutes		3.1		
676.0-A4a Floor Drain Coll. Tank Room	No	No	No	No	< 5 minutes		3.1		
676.0-A5 Gas Stripper Feed Pump Room	No	Yes, Full	No	No	< 10 minutes		3.1		
676.0-A6 Spare	No	Yes, Full	No	No	< 60 minutes		3.1		
676.0-A7 Spare	No	No	No	No	< 60 minutes		3.1		
676.0-A8 Containment Spray Pump 1B-B	Yes	Yes, Partial	No	No	< 5 minutes		3.1		
676.0-A9 Containment Spray Pump 1A-A	Yes	Yes, Partial	No	No	< 5 minutes		3.1		
676.0-A16 Pipe Gallery	Yes	Yes, Full	No	No	< 5 minutes		3.1	Yes	Yes
692.0-A1 Corridor (Subdivided into Analysis Volumes 692.0-A1A1, A1A2, A1A3, A1AN, A1BN, A1B, AND A1C)	Yes	Yes, Full (except in tunnel to RWST)	Yes, Full, Enhanced (except in tunnel to RWST)	1 hour	< 90 minutes	2.4, 2.6	3.1 (Tunnel to RWST)	Yes	Yes
692.0-A2 Valve Gallery	No	No	No	No	< 5 minutes		3.1		
692.0-A3 Gas Decay Tank Room	No	No	No	No	< 5 minutes		3.1		
692.0-A4 Chemical Drain Tank Room	No	Yes, Full	Yes, Full	No	< 5 minutes				
692.0-A5 Gas Decay Tank Room	No	No	No	No	< 5 minutes		3.1		
692.0-A8 Pipe Gallery and Chase	Yes	Yes, Full	No	No	< 5 minutes		3.1	Yes	Yes
692.0-A9 Charging Pump 1A-A	Yes	Yes, Partial	Yes, Partial	No	< 20 minutes		3.1		
692.0-A12 Safety Injection Pump 1B-B	Yes	Yes, Full	Yes, Full	No	< 5 minutes				Yes
692.0-A13 Safety Injection Pump 1A-A	Yes	Yes, Full	Yes, Full	No	< 5 minutes				Yes
692.0-A17 M&TE Tool Room	No	Yes, Full	Yes, Partial	No	< 5 minutes		3.1		
692.0-A18 Hot Tool Room	Yes	Yes, Full	Yes, Partial	No	< 5 minutes		3.1	Yes	Yes
692.0-A27 Concentrate Filter Room	No	No	No	No	< 5 minutes	2.6	3.1		
692.0-A29 Boric Acid Evap. Pkg Room B	No	No	No	No	< 5 minutes		3.1		
692.0-A30 Boric Acid Evap. Pkg Room A	No	No	No	No	< 5 minutes		3.1		
692.0-A31 Spare	No	Yes, Full	No	No	< 10 minutes	2.6	3.1		
713.0-A28 Pipe Chase	Yes	Yes, Full	No	No	< 5 minutes		3.1	Yes	Yes
<b>FIRE AREA 1-2:</b>									
692.0-A19 Safety Injection Pump Room 2A-A	No	Yes, Full	Yes, Full	No	< 5 minutes				
<b>FIRE AREA 2-1:</b>									
676.0-A10 RHR Pump Room 1B-B	Yes	Yes, Partial	No	No	< 5 minutes				Yes

# **PART I - INTRODUCTION**

**TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE**

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd In any room due to fire In room	Man. Ops. req'd In any room due to fire In room
<b>FIRE AREA 2-2:</b>									
676.0-A13 - RHR Pump Room 2B-B	No	Yes, Partial	No	No	< 5 minutes				
<b>FIRE AREA 3-1:</b>									
676.0-A11 RHR Pump Room 1A-A	Yes	Yes, Partial	No	No	< 5 minutes				
<b>FIRE AREA 3-2:</b>									
676.0 A12 - RHR Pump Room 2A-A	No	Yes, Partial	No	No	< 5 minutes				
<b>FIRE AREA 4:</b>									
692.0-A6 Auxiliary Feedwater Pump Room 1A-S	Yes	Yes, Full	Yes, Full	No	< 5 minutes				
<b>FIRE AREA 5:</b>									
692.0-A7 Pipe Gallery	Yes	Yes, Full	Yes, Full	No	< 5 minutes				Yes
<b>FIRE AREA 6:</b>									
692.0-A10 Charging Pump Room 1B-B	Yes	Yes, Partial	Yes, Partial	No	< 20 minutes				Yes
<b>FIRE AREA 7:</b>									
692.0-A11 Charging Pump Room 1C	Yes	Yes, Partial	Yes, Partial	No	< 20 minutes				Yes
<b>FIRE AREA 8:</b>									
713.0-A1 - Auxiliary Building (Subdivided into Analysis Volumes 713.0-A1A1, A1A2, A1A3, A1A4, A1AN, A1BN, A1B, and A1C)	Yes	Yes, Full	Yes, Partial	1 hour	< 180 minutes	2.4, 2.5, 2.6	3.1 (Boric Acid Tank Area of A1B only)	Yes (A1A1-A1A4)	Yes
713.0-A2 - Air Lock	No	Yes, Full	Yes, Full	No	< 10 minutes				
713.0-A3 - Titration Room	No	Yes, Full	Yes, Full	No	< 10 minutes				
713.0-A4 - Radio Chemical Lab	Yes	Yes, Full	Yes, Full	No	< 20 minutes				
713.0-A5 - Counting Room	No	Yes, Full	Yes, Full	No	< 60 minutes				
713.0-A9 - Valve Gallery	No	No	No	No	< 5 minutes		3.1		
713.0-A10 - Seal Water Heat Exchanger 1A	No	No	No	No	< 10 minutes		3.1		
713.0-A11 - Heat Exchanger 1B	Yes	No	No	No	< 5 minutes		3.1		Yes
713.0-A12 - Heat Exchanger 1A	Yes	No	No	No	< 5 minutes		3.1		Yes
713.0-A13 - Sample Room 1	Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
713.0-A14 - Sample Room 2	No	Yes, Full	Yes, Full	No	< 5 minutes				
713.0-A17 - Seal Water Heat Exchanger 2A	No	No	No	No	< 5 minutes		3.1		
713.0-A18 - Valve Gallery	No	No	No	No	< 5 minutes		3.1		
713.0-A22 - Valve Gallery	No	Yes, Full	Yes, Full	No	< 10 minutes				
713.0-A23 - CVCS Valve Gallery	No	No	No	No	< 5 minutes		3.1		
713.0-A24 - Waste Gas Comp. Valve Gallery	No	No	No	No	< 5 minutes		3.1		
713.0-A25 - Waste Gas Compressor B	No	No	No	No	< 10 minutes		3.1		
713.0-A26 - Waste Gas Compressor A	No	No	No	No	< 10 minutes		3.1		
713.0-A27 - Decontamination Room	Yes	Yes, Full	Yes, Full	No	< 5 minutes				
713.0-A30 - Air Lock	No	No	No	No	< 5 minutes		3.1		

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**TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE**

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd In any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 8 (continued)</b>									
713.0-A31 - Waste Gas Analyzer Room	No	No	No	No	< 5 minutes		3.1		
<b>FIRE AREA 9:</b>									
713.0-A6 - Pipe Gallery	Yes	Yes, Full	Yes, Full	1 hour	< 120 minutes	2.4	3.3		Yes
713.0-A8 - Reactor Building Access Room	No	No	No	No	< 5 minutes		3.1		
<b>FIRE AREA 9-1:</b>									
713.0-A7 - Volume Control Tank (VCT)	Yes	Yes, Full	Yes, Partial	No	< 5 minutes				Yes
<b>FIRE AREA 10:</b>									
692.0-A14 Cask Decon. Coll. Tank Room	No	Yes, Partial	Yes, Full	No	< 5 minutes				
692.0-A15 Spent Resin Tank Room	No	No	No	No	< 5 minutes				
692.0-A16 Valve Gallery	No	No	No	No	< 5 minutes				
728.0-A7 - Cask Decontamination Room	No	No	No	No	< 5 minutes				
729.0-A5 - Cask Unloading Area	No	Yes, Full	Yes, Full	No	< 10 minutes				
729.0-A6 - Nitrogen Storage Area	Yes	Yes, Full	No	No	< 5 minutes	2.6			
729.0-A8 - Fuel Transfer Valve Room	Yes	Yes, Room Full, Corridor None	Yes, Room Full, Corridor None	No	< 5 minutes	2.6			Yes
729.0-A9 - U2 Fuel Transfer Valve Room	No	Same as A8	Same as A8	No	< 5 minutes	2.6			
757.0-A13 - Refueling Room	Yes	No	No	No	< 5 minutes	4.5			
772.0-A9 - HEPA Filter Plenum Room	Yes	Yes, Full	Yes, Full	No	< 20 minutes				Yes
776.0-A1 - Elevator Machine Room	No	No	No	No	> 180 minutes				
786.0-A1 - Fan Room	No	No	No	No	< 5 minutes				
814.75-ACS - Roof Access Room	No	No	No	No	< 5 minutes				
New Fuel Storage Area	No	Yes, Full	No	No	< 5 minutes				
Stairwell No. 4	No	Yes, Full	No	No	< 5 minutes				
<b>FIRE AREA 11:</b>									
729.0-A3 - Waste Package Area	No	Yes, Full	Yes, Full	No	< 5 minutes				
729.0-A4 - Waste Package Area	No	Yes, Full	Yes, Full	No	< 120 minutes				
<b>FIRE AREA 12:</b>									
729.0-A1 - Main Steam Valve Rm (Unit 1 South)	Yes	No	No	No	< 5 minutes				Yes
737.0-A6 - Air Lock	Yes	No	No	No	< 5 minutes				Yes
<b>FIRE AREA 13:</b>									
729.0-A2 - Main Steam Valve Rm (Unit 1 North)	Yes	No	No	3 hour	< 5 minutes				Yes
729.0-A16 - Shield Building Vent Radiation Monitoring Room	Yes	No	No	No	< 5 minutes				Yes
Additional Equip. Building (AEB) - (729.0-A14, 737.0-A13, 763.5-A1, 775.25-A1, 786.5-A1)	Yes (729.0-A14 and 763.5-A1)	Yes (Partial & A13 none)	No	No	< 20 minutes				Yes (763A1, 729A14)
729.0-A12 - Steam Valve Instrument Room A	Yes	No	No	No	< 5 minutes				Yes

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TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number in Section VII	Evaluation Number in Section VII	CSD Repairs req'd in any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 14:</b>									
737.0-A1 - Auxiliary Building (Subdivided into Analysis Volumes 737.0-A1A, A1AN, A1BN, A1B, and A1C)	Yes	Yes, Full	Yes, Full	1 hour	< 180 minutes	2.4, 2.6		Yes	Yes
737.0-A2 - Hot Instrument Shop	No	Yes, Full	No	No	< 20 minutes		3.1		
737.0-A4 - Air Lock	No	No	No	No	< 5 minutes		3.1		
737.0-A7 - Unit 1 Letdown Heat Exchanger	No	No	No	No	< 10 minutes		3.1		
737.0-A8 - Unit 2 Letdown Heat Exchanger	No	No	No	No	< 5 minutes		3.1		
737.0-A11 - Air Lock	No	No	No	No	< 5 minutes		3.1		
<b>FIRE AREA 15-1:</b>									
737.0-A3 - Heat and Vent Equipment Room	Yes	Yes, Full	Yes, Full	1 hour	< 30 minutes			Yes	Yes
<b>FIRE AREA 15-2:</b>									
737.0-A12 - Heat and Vent Equipment Room	Yes	Yes, Full	Yes, Full	No	< 5 minutes				Yes
<b>FIRE AREA 16:</b>									
737.0-A5 - Ventilation and Purge Air Room	Yes	Yes, Full	Yes, Full	No	< 20 minutes	2.6			Yes
737.0-A15 - Gross Failed Fuel Detector Room	No	None See Note 1	Yes, Full See Note 1	No	< 5 minutes				
<b>FIRE AREA 17:</b>									
757.0-A2 - 6.9kV and 480V Shutdown Board Room A	Yes	Yes, Full	Yes, Full	1 hour	< 180 minutes	2.6		Yes	Yes
757.0-A9 - Personnel and Equipment Access	Yes	Yes, Full	Yes, Full	1 hour	< 90 minutes			Yes	Yes
<b>FIRE AREA 18:</b>									
757.0-A3 - 125V Vital Battery Board Room II	Yes	Yes, Full	Yes, Full (manual)	No	< 60 minutes				Yes
<b>FIRE AREA 19:</b>									
757.0-A4 - 125V Vital Battery Board Rm I	Yes	Yes, Full	Yes, Full (manual)	No	< 60 minutes				Yes
<b>FIRE AREA 20:</b>									
757.0-A1 - Auxiliary Control Room	Yes	Yes, Full	Yes, Full	1 hour	< 90 minutes	2.1			Yes
<b>FIRE AREA 21:</b>									
757.0-A25 - Auxiliary Control Instrument Room 1A	Yes	Yes, Full	Yes, Full	1 hour	< 180 minutes				Yes
<b>FIRE AREA 22:</b>									
757.0-A26 - Auxiliary Control Instrument Room 1B	Yes	Yes, Full	Yes, Full	1 hour	< 180 minutes				Yes

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**TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE**

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd In any room due to fire in room	Man. Ops. req'd In any room due to fire in room
<b>FIRE AREA 33:</b>									
772.0-A2 - 480V Board Room 1-B (Subdivided into Analysis Volumes 772.0-A2A1, A2A2, A2A3, A2A4)	Yes	Yes, Full	Yes, Partial	1 hour	< 180 minutes	2.4	3.1 (Column lines A6-A8/Q-R only)		Yes
<b>FIRE AREA 34:</b>									
772.0-A3 - 125V Vital Battery Room II	Yes	Yes, Full	Yes, Full (manual)	No	< 60 minutes				Yes
<b>FIRE AREA 35:</b>									
772.0-A4 - 125V Vital Battery Room I	Yes	Yes, Full	Yes, Full (manual)	No	< 60 minutes				Yes
<b>FIRE AREA 36:</b>									
772.0-A5 - 480V Transformer Room 1-B	Yes	Yes, Full	Yes, Full	1 hour	< 180 minutes	2.4			Yes
<b>FIRE AREA 37:</b>									
772.0-A6 - 480V Transformer Room 1-A	Yes	Yes, Full	Yes, Full	1 hour	< 180 minutes	2.4		Yes	Yes
<b>FIRE AREA 38:</b>									
772.0-A7 - Mechanical Equipment Room	Yes	Yes, Full	Yes, Full	No	> 180 minutes				Yes
<b>FIRE AREA 39:</b>									
772.0-A8 - Fifth Vital Battery and Board Room	Yes	Yes, Full	Yes, Full	No	< 60 minutes				Yes
<b>FIRE AREA 40:</b>									
772.0-A10 - Mechanical Equipment Room	Yes	Yes, Full	Yes, Full	No	< 180 minutes				Yes
<b>FIRE AREA 41:</b>									
772.0-A11 - 480V Transformer Room 2-B	Yes	Yes, Full	Yes, Full	No	< 150 minutes	2.4			Yes
<b>FIRE AREA 42:</b>									
772.0-A12 - 480V Transformer Room 2-A	Yes	Yes, Full	Yes, Full	No	< 180 minutes	2.4			Yes
<b>FIRE AREA 43:</b>									
772.0-A13 - 125V Vital Battery Room IV	Yes	Yes, Full	Yes, Full (manual)	No	< 60 minutes				Yes
<b>FIRE AREA 44:</b>									
772.0-A14 - 125V Vital Battery Room III	Yes	Yes, Full	Yes, Full (manual)	No	< 60 minutes				Yes

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TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd In any room due to fire in room	Man. Ops. req'd In any room due to fire in room
<b>FIRE AREA 45:</b>									
772.0-A15 - 480V Board Room 2-B (Subdivided Into Analysis Volumes 772.0-A15A1, A15A2, A15A3, A15A4)	Yes	Yes, Full	Yes, Partial	No	> 180 minutes	2.4	3.1 (Column lines A8-A10/Q-R only)		Yes
<b>FIRE AREA 46:</b>									
772.0-A16 - 480V Board Room 2-A	Yes	Yes, Full	Yes, Full	No	< 180 minutes	2.4, 2.6			Yes
<b>FIRE AREA 47:</b>									
786.0-A2 - Roof Access Air Lock	No	No	No	No	< 5 minutes				
786.0-A3 - Mechanical Equipment Room	No	No	No	No	< 5 minutes				
786.0-A4 - Mechanical Equipment Room	No	No	No	No	< 5 minutes				
<b>FIRE AREA 48: Control Building</b>	<b>See Note 2</b>					<b>See Note 2</b>			<b>See Note 2</b>
692.0-C1 - Mechanical Equipment Room	Assumed Yes	Yes, Full	Yes, Full	No	< 5 minutes	2.6			Yes
692.0-C2 - Mechanical Equipment Room	Assumed Yes	Yes, Full	Yes, Full	No	< 5 minutes				Yes
692.0-C3 - 250V Battery Room 1	Assumed Yes	Yes, Full	Yes, Full	No	< 60 minutes				Yes
692.0-C4 - 250V Battery Board Room 1	Assumed Yes	Yes, Full	No	No	< 10 minutes	2.3			Yes
692.0-C5 - 250V Battery Board Room 2	Assumed Yes	Yes, Full	No	No	< 10 minutes	2.3			Yes
692.0-C6 - 250V Battery Room 2	Assumed Yes	Yes, Full	Yes, Full	No	< 30 minutes				Yes
692.0-C7 - 24V and 48V Battery Room	Assumed Yes	Yes, Full	Yes, Full	No	< 20 minutes				Yes
692.0-C8 - 24V and 48V Battery Board and Charger Room	Assumed Yes	Yes, Full	No	No	< 10 minutes	2.3			Yes
692.0-C9 - Communications Room	Assumed Yes	Yes, Full	Yes, Full	No	< 90 minutes				Yes
692.0-C10 - Mechanical Equipment Room	Assumed Yes	Yes, Full	Yes, Full	No	< 5 minutes	2.6			Yes
692.0-C11 - Corridor	Assumed Yes	Yes, Full	Yes, Full	No	< 20 minutes	4.2			Yes
692.0-C12 - Secondary Alarm Station Room	Assumed Yes	Yes, Full	Yes, Full	No	< 90 minutes				Yes
708.0-C1 - Unit 1 Auxiliary Instrument Room	Assumed Yes	Yes, Full	Yes, Full (CO <sub>2</sub> )	No	< 180 minutes				Yes
708.0-C2 - Corridor	Assumed Yes	Yes, Full	No	No	< 20 minutes	2.3			Yes
708.0-C3 - Computer Room	Assumed Yes	Yes, Full	Yes, Full (CO <sub>2</sub> )	No	< 180 minutes				Yes
708.0-C4 - Unit 2 Auxiliary Instrument Room	Assumed Yes	Yes, Partial	Yes, Full (CO <sub>2</sub> )	No	< 180 minutes	2.3			Yes
729.0-C1 - Spreading Room	Yes	Yes, Full	Yes, Full	No	> 180 minutes				Yes
755.0-C1 - Mechanical Equipment Room	Assumed Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
755.0-C2 - Women's Restroom	Assumed Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
755.0-C3 - Corridor	Assumed Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
755.0-C4 - Kitchen	Assumed Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
755.0-C5 - Toilet	Assumed Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
755.0-C6 - Locker Room	Assumed Yes	Yes, Full	Yes, Full	No	< 5 minutes				Yes
755.0-C7 - Shower	Assumed Yes	No	No	No	< 5 minutes	2.3			Yes
755.0-C8 - Shower	Assumed Yes	No	No	No	< 5 minutes	2.3			Yes

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TABLE 1-1 SUMMARY COMPLIANCE FIRE PROTECTION CONFORMANCE

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd in any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 48: Control Building (continued)</b>									
755.0-C9 - Conference Room	Assumed Yes	Yes, Full	Yes, Full	No	< 180 minutes				Yes
755.0-C10 - SOS Office	Assumed Yes	Yes, Full	Yes, Full	No	> 180 minutes				Yes
755.0-C12 - Main Control Room	Yes	Yes, Full	No	No	< 20 minutes	2.3			Yes
755.0-C13 - Relay Room	Assumed Yes	Yes, Full	No	No	< 20 minutes	2.3			Yes
755.0-C14 - Technical Support Center	Assumed Yes	Yes, Full	Yes, Full	No	< 20 minutes				Yes
755.0-C15 - Corridor	Assumed Yes	Yes, Full	No	No	< 5 minutes	2.3			Yes
755.0-C16 - Conference Room	Assumed Yes	Yes, Full	Yes, Full	No	< 20 minutes				Yes
755.0-C17 - Telephone Room	Assumed Yes	No	No	No	< 5 minutes	2.3			Yes
755.0-C18 - NRC Office	Assumed Yes	Yes, Full	Yes, Full	No	< 30 minutes				Yes
755.0-C19 - Corridor	Assumed Yes	Yes, Full	Yes, Full	No	< 10 minutes				Yes
755.0-C20 - DPSO Shop	Assumed Yes	Yes, Full	No	No	< 30 minutes	2.3			Yes
692.0-755.0 - Stairwell C1	Assumed Yes	No	No	No	< 30 minutes	2.3, 4.2			Yes
692.0-755.0 - Stairwell C2	Assumed Yes	No	No	No	< 10 minutes	2.3, 4.2			Yes
<b>FIRE AREA 49: Diesel Generator Building</b>									
742.0-4 - Diesel Generator Unit 1A-A	Yes	Yes, Full	Yes, Full (CO2)	No	< 180 minutes	4.4			
760.5-3 - Unit 1A-A Air Exhaust Room	Yes	Yes, Full	No	No	< 90 minutes				
760.5-4 - 480V Board Room 1A-A	Yes	Yes, Full	Yes, Full (CO2)	No	< 120 minutes				
760.5-5 - Unit 1A-A Air Intake Room	Yes	Yes, Full	No	No	< 10 minutes				
<b>FIRE AREA 50: Diesel Generator Building</b>									
742.0-5 - Diesel Generator Unit 2A-A	Yes	Yes, Full	Yes, Full (CO2)	No	< 180 minutes	4.4			
760.5-6 - Unit 2A-A Air Exhaust Room	Yes	Yes, Full	No	No	< 90 minutes				
760.5-7 - 480V Board Room 2A-A	Yes	Yes, Full	Yes, Full (CO2)	No	< 90 minutes				
760.5-8 - Unit 2A-A Air Intake Room	Yes	Yes, Full	No	No	< 10 minutes				
<b>FIRE AREA 51: Diesel Generator Building</b>									
742.0-6 - Diesel Generator Unit 1B-B	Yes	Yes, Full	Yes, Full (CO2)	No	< 180 minutes	4.4			
760.5-9 - Unit 1B-B Air Exhaust Room	Yes	Yes, Full	No	No	< 90 minutes				
760.5-10 - 480V Board Room 1B-B	Yes	Yes, Full	Yes, Full (CO2)	No	< 120 minutes				
760.5-11 - Unit 1B-B Air Intake Room	Yes	Yes, Full	No	No	< 10 minutes				
<b>FIRE AREA 52: Diesel Generator Building</b>									
742.0-7 - Diesel Generator Unit 2B-B	Yes	Yes, Full	Yes, Full (CO2)	No	< 180 minutes	4.4			

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd in any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 52: Diesel Generator Building (continued)</b>									
760.5-12 - Unit 2B-B Air Exhaust Room	Yes	Yes, Full	No	No	< 90 minutes				
760.5-13 - 480V Board Room 2B-B	Yes	Yes, Full	Yes, Full (CO2)	No	< 120 minutes				
760.5-14 - Unit 2B-B Air Intake Room	Yes	Yes, Full	No	No	< 10 minutes				
<b>FIRE AREA 53: Diesel Generator Building</b>									
742.0-3 - Toilet	No	No	No	No	< 10 minutes				
742.0-8 - Fuel Oil Transfer Room	No	Yes, Full	Yes, Full (CO2)	No	< 5 minutes				
742.0-9 Pipe Gallery and Corridor (Subdivided in Analysis Volumes 742.0-A, B, N)	Yes	Yes, Full	Yes, Full	No	< 60 minutes	4.4			
<b>FIRE AREA 54: Diesel Generator Building</b>									
742.0-1 - CO2 Storage Room	No	No	No	No	< 5 minutes				
742.0-2 - Lube Oil Storage Area	No	Yes, Full	Yes, Full (CO2)	No	> 180 minutes				
742.0-10 - Conduit Interface Room	No	Yes, Full	No	No	< 120 minutes				
760.5-1 - Corridor	No	No	No	No	< 5 minutes				
760.5-2 - Radiation Shelter	No	No	No	No	< 10 minutes				
742.0-760.5 - Stairwell D1	No	No	No	No	< 10 minutes				
<b>FIRE AREA 55: Diesel Generator Building</b>									
DGB Cable Chase A	Yes, Train A	Yes, Full	Yes, Full	No	> 180 minutes				
<b>FIRE AREA 56: Diesel Generator Building</b>									
DGB Cable Chase B	Yes, Train B	Yes, Full	Yes, Full	No	> 180 minutes				
<b>FIRE AREA 57: Additional Diesel Generator Building</b>									
<b>Not required for Unit 1 Operation</b>									
742.0-1 - Diesel Generator Unit C-S	No	Yes, Full	Yes, Full (Foam)	No	< 120 minutes				
742.0-2 - Fuel Oil Transfer Room	No	Yes, Full	Yes, Full (Foam)	No	< 5 minutes				
742.0-3 - Pipe Gallery	No	Yes, Full	Yes, Full (Foam)	No	< 60 minutes				
742.0-4 - 6.9-KV Switchgear Room	No	Yes, Full	Yes, Full (Foam)	No	< 20 minutes				
742.0-5 - Corridor	No	Yes, Full	No	No	< 5 minutes				
742.0-6 - Closet	No	No	No	No	< 5 minutes				
760.5-1 - Air Intake Room	No	Yes, Full	No	No	< 10 minutes				
760.5-2 - 480V Auxiliary Board Room	No	Yes, Full	Yes, Full (Water)	No	< 90 minutes				
760.5-3 - Air Exhaust Room	No	Yes, Full	No	No	< 60 minutes				



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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd in any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 57: Additional Diesel Generator Building (continued)</b>									
<b>Not required for Unit 1 Operation</b>									
760.5-4 - Transformer Room	No	Yes, Full	Yes, Full (Foam)	No	< 90 minutes				
760.5-5 - Fire Protection Room	No	Yes, Full	No	No	< 5 minutes				
760.5-6 - Janitor's Closet	No	Yes, Full	No	No	< 5 minutes				
760.5-7 - Corridor	No	Yes, Full	No	No	< 5 minutes				
760.5-8 - Closet	No	No	No	No	< 5 minutes				
742.0-760.5 - Stairwell D3	No	No	No	No	< 5 minutes				
<b>FIRE AREA 58: IPS</b>									
IPS EL 741 - ERCW Pump Room A	Yes	Yes, Partial	No	No	< 90 minutes	2.6			Yes
IPS EL 741 - Screen Wash and HPFP A Pumps Room	Yes	No	No	No	< 20 minutes	2.6, 5.1	3.4		Yes
IPS EL 722 - ERCW Strainer Room A	Yes	Yes, Full	No	No	< 5 minutes				Yes
<b>FIRE AREA 59: IPS</b>									
IPS EL 741 - ERCW Pump Room B	Yes	Yes, Partial	No	No	< 90 minutes	2.6			Yes
IPS EL 741 - HPFP B Pumps Room	Yes	No	No	No	< 5 minutes	5.1	3.4		Yes
IPS EL 722 - ERCW Strainer Room B	Yes	Yes, Full	No	No	< 5 minutes				Yes
<b>FIRE AREA 60: IPS</b>									
IPS EL 711 Board Room (Subdivided into Analysis Volumes IPS-CA, IPS-CC-A, IPS-CB, IPS-CC-B)	Yes	Yes, Full	Yes, Full	No	< 150 minutes	2.4			Yes
IPS EL 728 - RCW Pump Deck	No	No	No	No	< 5 minutes				
<b>FIRE AREA 61:</b>									
Unit 1 Reactor Building - Annulus (Subdivided into Analysis Volumes RO, RI, RIR, RA1, RA2, RA3, RA4, RF1, RF2)	Yes	Yes, Partial	Yes, Partial	Yes (RES)	> 180 minutes		3.3	Yes	Yes
Unit 1 Reactor Building - Primary Containment	Yes	Yes, Partial (RCPs)	Yes, Partial (RCPs)	Yes (RES)	< 90 minutes	2.2		Yes	Yes
<b>FIRE AREA 62:</b>									
<b>Not required for Unit 1 Operation</b>									
Condensate Demineralizer Waste Evaporator Building	No	No	No	No	< 10 minutes				
<b>FIRE AREA 63:</b>									
Turbine Building	Yes (Steam isolation valves, offsite power & RCP trip ckts)	Yes (NSR turbine oil reservoir & H2 seal oil)	Yes (CB wall; NSR turb.oil reservoir & H2 seal oil)	No		2.6	3.2		

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Room Number and Name	Safe Shutdown Equipment or Cables Y/N	Automatic Detection Y/N, Full/Partial	Automatic Suppression Y/N, Full/Partial	Fire Rated Wraps	Combustible Load, Fire Severity	Deviation Number In Section VII	Evaluation Number In Section VII	CSD Repairs req'd In any room due to fire in room	Man. Ops. req'd in any room due to fire in room
<b>FIRE AREA 64:</b>									
Yard	Yes (Duct Banks and Tanks)	Yes (Only Transformers and H2 Storage Trailers)	Yes (Only Transformers and H2 Storage Trailers)	No		2.6 (duct banks)			Yes
<b>Fire Area Unit 2 Locations</b>									
676.0-A14 - U2 Containment Spray Pump 2A-A									
676.0-A15 - U2 Containment Spray Pump 2B-B									
676.0-A17 - U2 Pipe/Valve Gallery						2.6 (hatch)			
692.0-A20 - U2 Safety Injection Pump 2B-B									
692.0-A21 - U2 Charging Pump 2C									
692.0-A22 - U2 Charging Pump 2B-B									
692.0-A23 - U2 Charging Pump 2A-A									
692.0-A24 - U2 Pipe/Valve Gallery and Chase									
692.0-A25 - U2 Pipe/Valve Gallery	Yes				< 5 minutes				Yes
692.0-A26 - U2 TDAFW Pump 2A-S	Yes				< 5 minutes				Yes
713.0-A15 - U2 Heat Exchanger 2A									
713.0-A16 - U2 Heat Exchanger 2B									
713.0-A19 - U2 Pipe Gallery	Yes				< 5 minutes				Yes
713.0-A20 - U2 Volume Control Tank Room									
713.0-A21 - U2 Reactor Building Access Room									
713.0-A29 - U2 Pipe Chase									
729.0-A10 - U2 North Main Steam Valve Room									
729.0-A11 - U2 South Main Steam Valve Room									
729.0-A13 - U2 Steam Valve Instrument Room B									
729.0-A15 - U2 Upper Head Injection Room									
729.0-A17 - U2 Shield Building Vent Radiation Monitoring Room									
737.0-A9 - U2 Ventilation and Purge Air Room						2.6			Yes
737.0-A10 - U2 Air Lock									
737.0-A14 - U2 Air Lock									
737.0-A16 - U2 Gross Failed Fuel Detector Room									
757.0-A14 - U2 Reactor Building Access Room		Yes, Full	Yes, Full			4.7			
757.0-A15 - U2 Reactor Building Hatch		Yes, Full	Yes, Full			4.7			
757.0-A16 - U2 Emergency Gas Treatment Filter Room	Yes	Yes, Full	Yes, Full		~ 60 minutes				Yes
782.0-A3 - U2 Control Rod Drive Equipment Room	Yes	Yes, Full	Yes, Full		< 60 minutes				Yes
782.0-A4 - U2 Pressurizer Heater Transformer Room 2	Yes	Yes, Full	Yes, Full		< 90 minutes				Yes
<b>Fire Area Duct Banks</b>									
AB 713.0-A1B - DPIPS-A Cable Chase from Aux. Bldg. 713.0-A1B to IPS-A	Yes	No	No	No		No	No		

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**Note 1:** 737.0-A15 is provided with full suppression, but is not provided with detection. Actuation of detection system in 737.0-A5 is required to release deluge valve and charge system head in 737.0-A15. See Part VI Section 3.21.1.

**Note 2:** Entire control building is an alternative shutdown area. Cable location by room not routed; therefore, assumed to be in any room.

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### 8.0 **FIRE PROTECTION PROGRAM ADMINISTRATIVE AND TECHNICAL CONTROLS**

This section of the WBN Plan provides the administrative process and controls for implementation of the Fire Protection Program.

#### 8.1 **Program Changes and Associated Review and Approval**

- a. The Nuclear Safety Review Board (NSRB) provides independent review, oversight, and technical reviews.
- b. The Fire Protection Supervisor reviews proposed changes to the Fire Protection Report and fire protection administrative procedures to ensure adequacy and compliance with established regulatory commitments in accordance with site specific procedures.
- c. WBN may make changes to the approved Fire Protection Report without prior approval of the NRC only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.
- d. The Fire Protection Report is updated in accordance with 10CFR50.71.

#### 8.2 **Modification Control**

A fire protection evaluation is performed (when required) for plant modifications in accordance with established Nuclear Engineering procedures. This evaluation is performed to ensure that adequate fire protection measures are maintained, combustible loading considerations are addressed, the overall Fire Protection Program is not degraded, and requirements and guidelines of regulatory agencies have been considered. The evaluation also addresses specific commitments to the applicable sections of 10CFR50, Appendix R.

#### 8.3 **Audits/Inspections of the Fire Protection Program**

Generic Letter No. 82-21, "Technical Specifications for Fire Protection Audits" provides for a system of audits to be conducted to assess the WBN fire protection equipment and FPP implementation to verify continued compliance with NRC requirements and TVA commitments. The audit program is provided in the NQAP.

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### 8.4 Assessment of Information Notices, Generic Letters, Bulletins, etc.

The Watts Bar Nuclear Experience Review (NER) Program ensures that NRC Information Notices, Generic Letters, Bulletins, and other relevant documents that provide information on generic or specific fire protection and/or fire safe shutdown issues are assessed for applicability to WBN. The responsible organizations (i.e., licensing, engineering, operations, etc.) for addressing the applicable issues are determined upon assessment of the issues identified in the documents.

### 8.5 Violation and Reportability

Violations of an Operating Requirement (OR) or a Testing and Inspecting Requirement (TIR) described in Section 14.0 shall be evaluated for reportability in accordance with 10 CFR 50.72 and 10 CFR 50.73. Violations occur when the limits of the TIR (including allowable extensions) are exceeded or conditions of the OR and its associated action statement are not met.

## 9.0 EMERGENCY RESPONSE

### 9.1 Fire Brigade Staffing

Effective handling of fire emergencies is an important aspect of the WBN Fire Protection Program. This is accomplished by trained and qualified emergency response personnel. The fire response organization is staffed and equipped for firefighting activities. The fire brigade is comprised of a fire brigade leader and four fire brigade members. The fire brigade shall not include the Shift Manager nor the other members of the minimum shift crew necessary for safe shutdown of the unit, nor any personnel required for other essential functions during a fire emergency. Additional support is available when needed through an agreement with a local fire department.

An Incident Commander is available to direct each shift fire brigade. The Incident Commander meets the requirements of a Unit Supervisor, Shift Technical Advisor or Shift Support Supervisor and has sufficient training in or knowledge of plant safety-related systems to understand the effects of fire and fire suppressants on safe shutdown capability.

The fire brigade composition may be less than the minimum requirements for a period of time not to exceed two hours, in order to accommodate unexpected absence, provided immediate action is taken to fill the required positions. The following are examples of emergencies that would prevent the full fire brigade from being available onsite: (a) a life-threatening medical emergency, requiring the plant ambulance and EMT responders to leave the site for transport of the patient, and (b) the fire brigade may respond to fires outside the site area, but still on the TVA Reservation, to respond to a fire that has the potential to or is affecting the ability for WBN to maintain the ability to safely shut down. This would include areas such as the Watts Bar Hydro and Fossil Plant switchyards. This response would be at the direction of the Shift Manager based on a concern for plant stability due to the fire or fire's threat. These are expected to be rare occurrences.

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### **9.5 Fire Emergency Procedures and Prefire Plans**

Fire emergency procedures and prefire plans specify actions taken by the individual discovering a fire and actions considered by the emergency response organization. Included in these procedures are operational instructions for response to the fire detection system annunciation. These procedures provide different levels of response based on whether there is an actual fire or an annunciation (e.g., a single zone annunciation in a cross zoned area will not carry the same level of response as a cross zone annunciation in the same area). An annunciation may or may not carry the same level of response as the report of a fire by site personnel. Prefire plans are not intended to establish a procedure or step-by-step process but to provide guidance, depending upon the particular circumstances, to aid in firefighting efforts. It is recognized that many different firefighting techniques or strategies exist which would be acceptable for fire suppression efforts.

Prefire plans are developed to support firefighting activities in safety-related areas, in fire safe shutdown system areas, and areas which may present a hazard to safety-related or FSSD equipment inside the boundaries of the Site Perimeter. The prefire plans include the following information, as appropriate:

- Identification of plant equipment
- Access and egress routes for fire areas
- Fire fighting strategy and tactics
- Location of fire protection features
- Identification of special fire, toxic material, and radiological hazards
- Special consideration of hazards
- Ventilation methodology

Safe shutdown procedures are available in the event a fire occurs in safety-related or FSSD equipment areas of the plant.

### **10.0 CONTROL OF COMBUSTIBLES**

Combustibles are controlled to reduce the severity of a fire which might occur in a given area and to minimize the amount and type of material available for combustion.

The use and application of combustible materials at WBN are controlled utilizing the following methods:

- Instructions/guidelines provided during general employee training/orientation programs.
- The chemical traffic control program.
- Periodic plant housekeeping inspections/tours by management and/or the plant fire protection organization.
- Design/modification review and installation process.
- Administrative procedures (e.g., Transient Combustible Control Program).

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The fire protection organization performs a periodic fire safety inspection of the safety-related areas of the plant to identify and minimize potential fire hazards.

The use and handling of combustible materials such as fire retardant-treated lumber, paper, plastic, and flammable/combustible gases and liquids are controlled in safety-related areas. The use of untreated lumber requires specific approval of the fire protection organization.

Combustible materials generated as a result of work activities are removed/cleaned up from the work area at the end of the shift or at the conclusion of the work activity, whichever is sooner.

The storage of combustible materials within safety-related areas is controlled by the fire protection organization.

The control of hazardous waste and hazardous materials is conducted in accordance with the chemical control and hazardous material processes.

Design considerations in the control of combustibles is utilized when appropriate. For example, these considerations include the application of noncombustible or limited combustible construction materials or components, use of noncombustible fluids in operating equipment, dikes, or containments provided for equipment containing combustible liquids, etc.

Combustible Control Zones (CCZs) are established at WBN to strictly control or prohibit the placement of transient combustibles. Transient combustibles brought into CCZs require an evaluation in accordance with site administrative procedures. The strict control or prohibition of combustibles by site procedures within the combustible control zone provides reasonable assurance that fire will not propagate and jeopardize redundant FSSD equipment. CCZs are shown on the compartmentation drawings (Figures II-27 through II-41).

### 11.0 CONTROL OF IGNITION SOURCES

The use of ignition sources such as welding, flame cutting, thermite welding, brazing, grinding, arc gouging, torch applied roofing, and open flame soldering within safety-related areas are controlled through the approval and issuance of an ignition source permit. Permits are reviewed and approved by appropriate plant personnel. The ignition source permit is valid for one job. Job area inspection shall be performed and documented at the start of each shift that ignition source activities are being performed. If no ignition sources activities are performed, then reinspection is not required.

Designated ignition source activity areas are located and approved by the fire protection organization. A fire watch system shall be established for all ignition source work activities that are performed in safety-related areas of the plant. Ignition source fire watches are established and will remain for 30 minutes following the elimination of the ignition source, unless other durations are approved by the fire protection organization.

Smoking is not allowed in any safety-related area.

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	<b>OR</b>	<b>TIR</b>	<b>Bases OR</b>	<b>Bases TIR</b>	<b>Associated Table</b>
<b>Section</b>					
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- 14.2.1 With two electric pumps operable and the diesel driven fire pump inoperable:
- a. Restore the diesel driven fire pump to operable status within 7 days  
-OR-
  - b. Ensure three electric driven pumps operable AND within one hour a fire watch is established as follows:
    1. hourly roving fire watch is established in the Auxiliary Building Elevations 713, 737, 757, 772 and IPS if the fire detection equipment for the area is operable -OR-,
    2. continuous fire watches are established in the Auxiliary Building Elevations 713, 737, 757, 772 and IPS if the fire detection equipment for the area is inoperable.-OR-
  - c. Provide a backup pump with at least the same capacity as an electric fire pump AND establish hourly roving fire watch coverage for the areas with common power supplies. Within 7 days after entry from either 14.2.1.a or 14.2.1.b, either enter 14.2.1.b or restore the diesel driven fire pump to operable status.
- 14.2.2 With only one electric driven fire pump operable AND the diesel driven fire pump operable:
- a. Restore an additional electric driven fire pump to operable status within 30 days.
- 14.2.3 With no electric driven pumps operable AND the diesel driven fire pump operable:
- a. Restore one electric driven pump to operable status within 7 days AND enter 14.2.2.
- 14.2.4 With only one electric driven pump operable AND the diesel driven fire pump inoperable:
- a. Restore an additional electric driven pump to operable within 24 hours, restore the diesel fire pump to operable within 7 days, AND enter 14.2.2, -OR-
  - b. Restore the diesel driven fire pump to operable within 24 hours AND enter 14.2.2.
- 14.2.5 With no water supply system pumps operable:
- a. Establish a backup water supply system within 24 hours, AND restore one electric driven pump to operable within 48 hours AND a second electric driven pump to operable with 72 hours, AND restore the diesel fire pump to operable within 7 days, -OR-
  - b. Establish a backup water supply system within 24 hours, AND restore the diesel driven fire pump within 48 hours AND enter 14.2.3.
  - c. Perform 10CFR50.72 and/or 10CFR50.73 reviews in accordance with site administrative procedures

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- 14.2.6 With the Fire Suppression Water supply system inoperable for reasons other than loss of a fire pump:
- Within one (1) hour enter the applicable Operating Requirements of Section 14.3 AND/OR 14.6 AND/OR 14.7 for those devices with no flow path available. No other action is necessary.
  - If the condition involves powering up a normally de-energized valve operator to cycle the valve, then within one (1) hour establish a constant attendant at the breaker.
  - Restore the system to normal alignment within 30 days. If not restored within 30 days, continue the compensatory actions AND perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures.
- 14.2.7 With High Pressure Fire Protection (HPFP) or raw service water (RSW) usage's that are not as-designed loads or as-designed loads that have inhibited automatic isolation capability:
- Provide isolation capability AND within one (1) hour establish a constant attendant in communication with the O-M-29 Operator for HPFP/RSW usage's that are not as-designed.
  - Ensure the inhibited automatic isolation is controlled by procedure.
  - Remove the non-as-designed HPFP/RSW usage or restore the automatic isolation capability within 30 days. If not restored within 30 days, continue the compensatory actions AND perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures.
- 14.2.8 With three of the electric driven pumps capable of manual starting from the Main Control Room (MCR) or their associated 480V shutdown board but the automatic start circuitry inoperable.
- Ensure the inhibited automatic start circuitry is controlled by procedure.
  - Restore the system to normal alignment within 30 days. If not restored within 30 days perform 10 CFR 50.72 and/or 10 CFR 50.73 reviews per site administrative procedures.

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- 14.3.1. With either suppression and/or associated Function B fire detectors inoperable in any of the locations noted above (a-h) in which redundant safe shutdown systems or components could be damaged by a single fire, within one hour, restore the inoperable equipment or:
- a. For accessible areas, within one hour establish the following:
    1. A continuous fire watch AND backup suppression equipment for those areas, if detection or both suppression and detection are inoperable, -OR-
    2. A roving fire watch and backup suppression equipment for those areas, except for 737' elevation of the Auxiliary Building, if only the suppression is inoperable.
    3. A continuous fire watch and backup suppression equipment for the 737' elevation of the Auxiliary Building if suppression or detection or both are inoperable. This watch shall be limited to the 737' elevation of the Auxiliary Building.
  - b. For inaccessible areas, as noted, within one hour establish the following:
    1. For the Unit 1 Reactor Building, Lower Containment, within one hour establish a continuous fire watch -OR- monitor the air temperature in the area once per hour using U-9020 on Plant Computer.
    2. For other inaccessible areas with detection inoperable OR both suppression and detection inoperable, within one hour establish backup suppression equipment and:
      - a. A continuous fire watch, OR
      - b. Provide alternate compensatory actions.
    3. For other inaccessible areas with inoperable suppression only, within one hour establish backup fire suppression equipment AND:
      - a. An hourly roving fire watch, OR
      - b. Provide alternate compensatory actions.
- 14.3.2 With either inoperable suppression or associated Function B fire detectors in any of the locations noted above (a-h) in which redundant safe shutdown systems or components are NOT exposed to the damage of a single fire, within one hour establish a roving fire watch AND backup suppression equipment for those areas.
- 14.3.3 Restore the inoperable suppression and/or associated detection to Operable status within 14 days. If not restored within 14 days, continue the compensatory actions AND perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures. Also, determine if any continuous fire watch routes are to be augmented as specified in Section 13.0.A.

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### 14.5 Fire Detection Supervision

The supervision capabilities of the local control panels identified on Table 14.5 shall be Operable when the associated fire detectors identified on Table 14.1 are required to be operable.

**NOTE:** These action statements apply to both Function A and Function B detectors and the actuation circuits for automatic valves in the flow path.

- 14.5.1 With the supervisory function of a panel listed in Table 14.5 masked by a panel alarm or trouble, within eight hours, restore the inoperable equipment, -OR- jumper out the zone(s) providing the masking condition (alarm or trouble) AND implement the compensatory actions and time limits of Section 14.1, 14.3, or 14.4 as appropriate.
- 14.5.2 If the masking condition can not be cleared by jumpering out a zone(s), within 8 hours evaluate the condition for affects on the equipment operation and implement the compensatory actions and time limits of Section 14.1, 14.3, and 14.4 as appropriate -AND- restore the panel to Operable status within 14 days. If not restored within 14 days, continue the established compensatory actions AND perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures.
- 14.5.3 If conditions exist that would warrant returning a masked circuit to a functional status prior to the circuit's return to normal, with the supervisory function of a panel listed in Table 14.5 masked by a panel alarm or trouble, defeat the alarm or trouble masking condition while maintaining the circuit's functional capability, verify the circuit's functional capability, -AND- establish the controls to monitor the circuit's functional capability periodically. Restore the panel to Operable status within 30 days. If not restored within 30 days, continue the established compensatory actions -AND- perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures.

### 14.6 Fire Hose Stations/Standpipes

The fire hose stations listed in Table 14.6 have been provided to support manual fire fighting efforts in safety-related or FSSD buildings, areas, and/or rooms at WBN Unit 1. The fire hose stations also provide backup suppression when the automatic suppression systems are inoperable. The fire hose stations listed in Table 14.6 shall be Operable whenever the safety-related or FSSD equipment in the areas protected by the fire hose stations is required to be Operable.

- 14.6.1 With one or more of the fire hose stations listed in Table 14.6 inoperable, within eight hours restore the inoperable equipment -OR- provide alternate protection for the area served by the inoperable hose stations(s).
- 14.6.2 Restore the fire hose station(s) to Operable status within 14 days. If not restored within 14 days, continue the compensatory actions AND perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures.

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### **14.9     Emergency Battery Lighting Units**

Emergency battery lighting units provided for FSSD shall be Operable whenever the illuminated associated fire safe shutdown equipment is required.

- 14.9.1 With any of the emergency battery lighting units provided for FSSD inoperable, restore the inoperable units to Operable status within 24 hours -OR- ensure alternate lighting is available.
- 14.9.2 Restore the inoperable emergency battery lighting unit to Operable status within 14 days. If not restored within 14 days, continue the compensatory actions AND perform 10CFR50.72 and/or 10CFR50.73 reviews per site administrative procedures.

### **14.10    Fire Safe Shutdown Equipment**

The equipment listed on Table 14.10 is required for Fire Safe Shutdown(FSSD) and shall be Operable (or in its FSSD condition) when the unit is in modes 1, 2, and 3. The non-System 26 valves noted on the plants mechanical flow diagrams as being administratively locked in the open, closed, or throttled position (with breaker open) for Appendix R shall be maintained in that condition when the unit is in Modes 1, 2 and 3.

- 14.10.1 With one or more required equipment in Table 14.10 inoperable (or not in its FSSD condition), restore to operable status (or its FSSD condition) within 30 days.
- 14.10.2 With one or more of the breakers and/or valves specified in design output documents not in the noted position or condition, return the breakers and/or valve to the required position within 30 days.
- 14.10.3 If required action and associated completion time cannot be met,
  - a. place the equipment in the condition required for FSSD, -OR-
  - b. provide a back-up means of instrumentation monitoring for the equipment in Table 14.10, -OR-
  - c. perform an evaluation to justify using alternate means to provide FSSD, -OR-
  - d. be in Mode 3 within 6-hours and Mode 4 within the following 12-hours.

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## TESTING AND INSPECTION REQUIREMENTS (TIR)

ITEM NO.	TYPE OF SYSTEM/COMPONENT	FREQUENCY	TESTING/INSPECTION REQUIREMENT (TIR)	NOTES
14.10.a	250 V Batteries 0-BAT-239-1 0-BAT-239-2	31 days	Verify battery terminal voltage and alignment to its associated DC bus.	
14.10.b	250 V DC Battery Boards 0-BD-239-1 0-BD-239-2  250 V DC Distribution Panels 0-DPL-239-1 0-DPL-239-2	31 days	Verify proper breaker alignment for supply of control power to steam load trip circuits and RCP breaker trip circuits.	
14.10.c	Main Steam System Valves (Table 14.10)	18 months	Verify capability to close valves using the associated hand switch in the Main Control Room or manually at the valve.	
14.10.d	Instrumentation	18 months	Perform a channel calibration for each required instrument channel.	
14.10.e	Component Cooling System (CCS) Pump 2B-B	92 days	Perform augmented in-service testing of pumps.	
	Thermal Barrier Booster Pump 1A Thermal Barrier Booster Pump 1B	92 days	Verify capability of pumps to provide 40 gpm to each thermal barrier heat exchanger.	
14.10.f	RCS Pressurizer Spray Valves 1-PCV-68-340B 1-PCV-68-340D	92 days	Verify capability to close valves using the associated hand switch in the Main Control Room	

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- B14.1.3 The restoration of equipment to Operable in 14 days is reasonable based on the type of equipment that is out of service. The time frame is consistent with standard Technical Specifications.
- B14.1.4.a With the CPU inoperable, for zones containing Function A Fire Detection Instrumentation shown in Table 14.1 in an accessible area, the panel shall be monitored within 1 hour. If the inoperable CPU cannot be restored within 1 hour, a continuous monitor patrol must be established. The establishment of a continuous monitor patrol for the affected panels is required to provide detection capability and notification to a constantly attended location until the inoperable CPU is restored to Operability. The Completion Time of one hour to establish a continuous roving monitor is reasonable and based upon the typical time necessary to establish a monitor patrol and to perform an inspection. These actions are consistent with the standard Technical Specifications requirements should the detectors have been declared inoperable. The Main Control Room (MCR) is exempted from this action since the MCR is the constantly attended location that is normally notified.
- B14.1.4.b With the CPU inoperable, for zones containing Function A Fire Detection Instrumentation shown in Table 14.1 in an inaccessible area, the monitoring of the air temperature for the affected area once per hour or the monitoring of the panel once per hour is to be established within one hour. The time frame of one hour to establish one of the compensatory actions is reasonable considering that it is consistent with standard Technical Specifications. The establishment of temperature monitoring or monitor patrols for the affected panels is required to provide detection capability to a constantly attended location until the inoperable CPU is restored to Operability. The time frame and actions are reasonable and based upon the necessary times and actions that would be required if these devices had been declared inoperable.
- B14.1.4.c With the CPU inoperable, for zones containing Function B Fire Detection Instrumentation shown in Table 14.1 in an inaccessible or accessible area, the panel shall be monitored hourly within one hour. The establishment of a monitor patrol once per hour for the affected panels is required to provide detection notification to a constantly attended location until the inoperable CPU is restored to Operability. The automatic actuations are still operable so the more restrictive compensatory actions of a continuous fire watch is not needed. The completion time of one hour to establish an hourly roving monitor is reasonable and is consistent with the standard Technical Specifications for when annunciation to a constantly attended location is inoperable such as in OR-14.1.1.
- B.14.1.5 The restoration of equipment to Operable in 14 days is reasonable based on the type of equipment that is out of service. The time frame is consistent with standard Technical Specifications.

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Either Action (a) or (b) is to be taken within 7 days so that three pumps are available. This provides 150% pump capacity to safety-related areas. The completion time of 7 days is reasonable considering that 100% of the required pumping capacity to safety-related areas is still provided, and the time required to identify the problem and to take the corrective actions. This is consistent with the standard Technical Specifications.

Action (c) is anticipated for planned outage activities where normally an entry will be made into (a) or (b) and then enter (c) for 7 days before re-entry into (a) or (b). While in cases of unplanned outages, it is anticipated an entry will be made into (a), (b), or OR 14.2.2, 14.2.3, 14.2.4 or 14.2.5 as appropriate. The backup pump for Action (c) also provides a measure of diversity by the general nature of how the existing electric pumps are installed. The backup pump will tend to be located on another water source, with another energy source and a diverse location to provide a tie-in for supplying the fire protection system. For Action (c), the two electric fire pumps and a backup fire pump, a continuous fire watch will be established in areas containing common power supplies. The determination of the fire watches' area of coverage will be based on information provided in Action (b) and additional areas where the power supplies for the backup pump are not separated by at least a one hour fire barrier from the cables associated with the Operable electric fire pumps. The provision of fire watches in areas of power supply interaction between the available electric fire pumps as well as the backup pump is consistent with other actions of OR-14.2.1.b. The completion time of 7 days to restore the 150% pump capacity (i.e., entering OR-14.2.1.b or restoration of the diesel fire pump) is reasonable and is consistent with other existing actions to ensure there is 150% pump capacity.

The backup pump shall be installed to meet the following criteria which will ensure that the pump is operated within the HPFP design limits.

1. The pump driver will be a diesel engine capable of operation for two hours.
2. The pump will provide a minimum 1590 gpm at 300 ft. head as demonstrated by a flow test.
3. Suction supply for the pump will be from the Tennessee River, a cooling tower basin, the 35 acre pond, the lined pond or other pond with a minimum of two hour supply at 1590 gpm.
4. A maximum pressure capability of 135 psig at elevation 729 feet. This maximum can be controlled manually provided the pump is constantly attended.
5. The pump will be connected to the High Pressure Fire Protection system via a non-OR fire hydrant using 1-5inch and 2 nominal 2½ hoses that are in current hydrostatic test requirements.
6. Manual start and control of the pump is acceptable provided the pump is constantly attended when required to be available.

In Modes 5 and 6 the locations where a continuous fire watch would be required may be combined and patrolled by a roving fire watch(es). While the plant is in cold shutdown or refueling, there are fewer systems needed for maintaining cold shutdown. Roving fire watches provide an adequate level of coverage for these systems by ensuring that potential fire hazards are detected and corrected in a timely manner, or if a fire were to occur, ensuring that timely action is taken.



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B.14.2.6 The closing of multiple sectional valves in the water supply piping of Section 14.2 can isolate the flow path to the using devices of Section 14.3, .6 and .7.

- a. In such a situation, the more restrictive requirements of Section 14.3, .6 or .7 would apply. The requirements of 14.3, .6 or .7 although more restrictive, address the specifically affected area(s). The entering of compensatory actions for the isolated using devices is reasonable.
- b. Specific valve operators that have had power removed due to Appendix R concerns require re-energizing to perform periodic testing such as cycling of valves to meet other regulatory requirements. The establishment of an attendant at the breaker will allow prompt action to be taken if a fire condition would occur during this time period.
- c. The restoration time of thirty (30) days is reasonable based on the equipment involved and the limited impairment to the Fire Suppression System.

B14.2.7 Specific usage's are supplied by the HPFP/RSW system and are required to be operable during normal plant operation. A calculation determined the limits for the total HPFP/RSW usage and is as follows:

- a. Selected as-designed RSW loads to remain unisolated during a fire condition (e.g., chiller packages and plant processes required during plant operation).
- b. Manual RSW isolation valves to be locked closed to preclude non-as designed RSW loads being added.
- c. Selected as designed RSW loads to automatically isolate during a fire condition.

This provides control of HPFP/RSW usage to ensure an adequate water supply is available for fire protection when needed.

RSW was originally designed to be used for multiple usage's (e.g., supply various chiller units and plant processes, cleaning of plant areas and other miscellaneous uses). Therefore when HPFP/RSW is needed outside the bounds of the established calculation, it is acceptable to establish compensatory actions employing isolation capability that will allow for prompt isolation of additional usage without requiring a Temporary Alteration Control Form (TACF).

- a. For HPFP/RSW usage that automatically isolates, it is not necessary to have the isolation point constantly attended with the attendant in communication with the Main Control Room (MCR), O-M-29 Operator. In the case where non-as designed HPFP/RSW loads are needed, a manual isolation capability is required and an attendant established in the area within one (1) hour. The attendant will be in communication (radio, telephone, PA, etc.) with the O-M-29 Operator in the MCR.

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- b. For those as designed RSW usage's that are designed to automatically isolate on a fire pump start, there will be times when this automatic isolation capability will need to be inhibited (e.g., during fire pump testing). During hot weather, there are chillers that are needed for plant operations and since the inhibiting of the automatic isolation is procedurally controlled, this will allow the plant to continue to operate normally during testing and still provide adequate compensatory actions to ensure an adequate supply of water for fire fighting if needed.
- c. Thirty (30) days is reasonable based on the actions required by Operating Requirement (OR) 14.10, which requires restoration of equipment required for 10CFR50, Appendix R within that time limit.

B14.2.8 The electric driven pump start circuitry, including the buffer relays, may be temporarily inhibited during maintenance/testing to prevent the fire pumps from starting automatically. The excessive starting of the deep draft electric motor driven fire pumps is an industry concern, therefore, limiting the starting of the electric driven fire pumps is a good practice. This action does not require additional compensatory measures for the following reasons:

- a. Taking the circuitry out of service and returning it to service will be administratively controlled by the testing documentation.
- b. The manual starting of the electric motor driven fire pumps from the Main Control Room (MCR) or their associated 480V shutdown board is not impaired. Additional administrative controls and abnormal operating instructions exist that ensure fire pumps are started upon the discovery of a fire.
- c. The system is normally pressurized without the operation of the fire pumps.

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B.14.3.1 More restrictive compensatory actions are appropriate where water based suppression equipment or associated fire detection equipment are provided to protect redundant safe shutdown systems or components that could be damaged if a fire occurred. With any fire suppression shown in Table 14.3 inoperable in any accessible or inaccessible area, the inoperable equipment must be restored within one hour. If both the suppression and associated detection are inoperable in an area containing both trains of safe shutdown equipment, then it is appropriate to provide continuous fire watch coverage except as modified below. The completion time of one hour is based on the standard Technical Specifications.

- a. When both the suppression and associated detection are inoperable or detection is inoperable in an area, then the more stringent compensatory actions are needed. If only the water based suppression is inoperable, then the early warning detection system will provide more extensive coverage of the area and faster notification than can be provided by a fire watch. Therefore, it is appropriate to provide a lesser degree of fire watch coverage (i.e., Hourly roving fire watch). When the detection is inoperable and the associated suppression is still operable then the more restrictive compensatory action is required. In this situation, not only is the early warning capability lost, but so is the automatic actuation capability of the suppression system.
- b. The inoperable suppression is to be restored within one hour. If the area in the Unit 1 Reactor Building, Lower Containment, then special consideration is needed due to the radiological conditions, building construction, and hazards present. In this case the area with inoperable suppression and/or detection must have a continuous fire watch established, or the air temperature must be monitored in the affected area once per hour. The completion time of one hour to establish continuous fire watch or hourly monitoring of the air temperature is reasonable. Either of these compensatory actions and associated time frequency are acceptable based on the air supervision for the Reactor Coolant Pump (RCP) sprinkler system, the RCP oil collection system and the capability to monitor RCP bearings temperatures in the MCR. Furthermore, the one hour frequency for air temperature monitoring is considered adequate in view of other indications available in the MCR, including alarms to alert the operator to abnormal containment temperature conditions. This is also consistent with the standard Technical Specification on the loss of detection in an inaccessible area such as Lower Containment.

Fire suppression is not assumed to be operable to mitigate the consequences of a design accident or transient. In designing the accident sequence for theoretical hazard evaluation, fires are not assumed to take place simultaneously with the design basis event (DBE) or transient. Therefore, observing the same instruments that are used by SRs 3.6.5.1 and 3.6.5.2 once per hour along with the other indications available in the main Control Room, including alarms to alert the operator of abnormal Containment temperature conditions provides an equivalent level of fire safety without exposing personnel to unnecessary radiation exposure. Additionally, this method of compensatory actions for inoperable suppression systems in Lower Containment was approved by NRC for Sequoyah Nuclear Plant's TS 3.3.3.8 that was current at the time Watts Bar Nuclear Plant's FPR was written. This approval was also contained in Sequoyah Nuclear Plant's FPR when Sequoyah's fire protection was removed from TS and placed in the FPR.

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Normally a circuit that causes an alarm or trouble condition that results in a masking condition is repaired within 8 hours or taken out of service. Due to special situations, it may be desired to clear this masking condition while maintaining the circuit's functional capability to actuate (i.e., alarm) and to detect grounds and to monitor for internal module failures (i.e., trouble) but not the Class A supervision to detect conductor failure. In such special conditions, the resulting temporary alteration control form (TACF) will provide the advantage of the circuit remaining alarm functional which is preferable to the lifting the field wiring, jumpering the monitoring module out of service, and thus completely removing any capability of the circuit. An example of this situation is a problem such as a cable between two devices on a circuit must be removed for operational purposes and this would cause a trouble but due to the Class A design of the system the devices would remain functional. If the circuit field wiring was to be lifted at the controlling module and the devices taken completely out of service then the resulting compensatory measures could be a hourly or continuous fire watch. There is an advantage of having the equipment functional for normal automatic operation in lieu of the manual actions of a fire watch and the subsequent fire brigade. The module providing the supervision will continue to monitor itself and report trouble conditions of the module and grounds on the circuit. The propose of OR-14.5.3 is to address the masking concern by applying jumpers to the controlling module to clear the trouble and cause the loss of supervision of the field wiring for a break in the conductors but will allow the circuit actuation capability to remain functional to provide actuation as well as the circuits ability to detect grounds and internal failures of the monitoring module. The device(s) on either side of this lifted cable would be functionally tested for actuation capability at the time the TACF is first installed to ensure the functional actuation capability then periodically tested to ensure the continued integrity of the remainder of the circuit. Should the portion of the circuit taken out of service include an initiating device then the appropriate OR-14.1, -14.3, or -14.4 will be entered for the device taken out of service and OR-14.5.3 will be entered for the balance of the circuit that is actuation functional. This periodic testing of the circuit is expected to be every 7 days for detection circuits and every 6 months for suppression system actuation circuits for automatic valves in the flow path. These frequencies are reasonable due to the configuration and work control processes provided at WBN and the problem reporting process (e.g., corrective action program) that would investigate a condition that might have endangered a circuit. In addition, the 6 month testing frequency for the suppression system actuation circuits for automatic valves in the flow path, is reasonable since the associated detection circuits would still be available to alert plant personnel of any fire. The frequency of 6 months is the same frequency SQN tests similar suppression system actuation circuits for automatic valves in the flow path. The 30 days to correct this condition is reasonable since the problem is of such a nature that the desire for the continued function of the circuit is of sufficient importance that a TACF was generated in lieu of using the 14 day limits the other ORs referenced. This desire includes the advantage of maintaining equipment in a automatic mode instead of the reliance on manual actions coupled with the reliability of the administrative controls to prevent damage to the equipment. The need for the extra time could be caused by such factors as inaccessibility due to radiological or personnel safety reasons. The physical action, lifting the field cable in the above example, is a TACF and will be addressed by appropriate site procedures which will be prepared to established the requirements to address this condition in advance of its implementation.

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### BASES - OPERATING REQUIREMENTS(OR) FIRE HOSE STATIONS/STANDPIPES

- B.14.6 Fire hose stations listed in Table 14.6, as part of the water suppression system, ensure that adequate manual fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related or FSSD equipment is located and to provide backup to primary suppression systems.
- B.14.6.1 With one or more of the fire hose stations inoperable, the degree of fire protection provided to safety related equipment and fire safe shutdown equipment is degraded. Consequently, a backup source of fire hose protection must be supplied from the nearest operable fire hose station. This can be accomplished by routing additional fire hose from an Operable water source (hydrant, hose station, etc.) to the affected area; by staging fire hose immediately outside the affected area; or by providing alternate fire suppression equipment commensurable with the fire hazards present. Normally the method to do this is by providing a gated wye(s) and additional fire hose at the nearest operable fire hose station. In some instances, the physical routing of fire hoses from the Operable hose station to the inoperable hose station may result in a recognizable hazard to operating technicians, plant equipment (e.g., breaching a fire barrier), or the hose itself. In such cases, the hose will be appropriately stored at the operable hose station. The completion time of eight hours is reasonable since normally the responding fire brigade would bring additional fire hose. In addition, this hose is not for occupant use but restricted for use by trained fire fighting personnel.

The hose stations in the Reactor Building Lower Containment require special consideration. To provide protection during outages (during Modes 5 and 6), appropriate lengths of hose and nozzles are provided at the fire protection siamese located at the entrance to Lower Containment. In Modes 1 through 4 these hoses are not required since occupancy and access is limited, thus personnel are normally not available locally to use this manual means of fire fighting. The hose station valves and water supply will be maintained operable. Extra hose and nozzles are available in the Fire Equipment Cages in the plant in case of an emergency.

- B.14.6.2 Restoration of the equipment to Operable status within 14 days is reasonable considering the equipment involved. The time frame is consistent with the standard Technical Specifications.

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### **BASES - TESTING AND INSPECTION REQUIREMENTS (TIR) FIRE HOSE STATIONS/STANDPIPES**

- B.14.6.a TIR 14.6.a requires performance of a visual inspection of the fire hose stations in any accessible area to assure all required equipment is at the station and the station is not blocked or obstructed. The frequency of 92 days is considered reasonable in view of the infrequent problems found with hoses and is based on operating experience.
- B.14.6.b TIR 14.6.b verifies the correct alignment for testable valves (except hose valves) in any accessible area in the fire hose station/standpipe system flow paths and provides assurance that the proper flow paths will exist for hose station operation. Valves that are locked, sealed, or otherwise secured in position need only be verified to still be locked, sealed, etc., since these were verified to be in the correct position prior to locking, sealing, or securing. This inspection does not require any testing or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned and preventing or inhibiting fire suppression activities are in the correct position. A frequency of 92 days has been established and is more conservative than the inspection criteria established for primary systems valves that are locked, sealed, etc.
- B.14.6.c TIR 14.6.c ensures that each testable valve (except hose valves) in any accessible area will travel through at least one cycle. This TIR is necessary to ensure the valves are Operable in the event of an actuation for fire suppression needs. A frequency of 12 months has been established based on operating experience, and is consistent with standard Technical Specification requirements and NFPA consensus standard 25 criteria.
- B.14.6.d TIR 14.6.d requires that fire hose, associated with fire hose stations identified in Table 14.6 and stored in unheated areas, undergo a hydrostatic test once every 12 months. This hydrostatic test ensures that the hose is reliable and can withstand the working fire main pressure. Appropriate manufacturers' markings or initials and date by test personnel are sufficient to document this hydrostatic test. The manufacturers' markings are done in accordance with industry consensus standards. Initials and date by test personnel are sufficient to ensure proper controls are maintained. The frequency of 12 months is based upon regulatory guidelines, has been shown to be acceptable through operating experience, and is consistent with standard Technical Specification requirements.

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- B.14.6.e TIR 14.6.e ensures that each dry standpipe water flow device actuates to its correct position upon an initiation signal. The dry standpipe control valve is a deluge valve for which there is limited means to ensure a complete cycle of travel is achieved. For cycling these valves, the industry practice of closing the isolation valve all but a few turns until the deluge valve opens and then completing the closing of the isolation valve. Also, each testable valve in any inaccessible area, will travel through at least one cycle. The pushbuttons associated with these hose stations in the Reactor Building not only provide a means to open the deluge valve that allows water into the normally dry standpipe system as discussed in Section 12.2 but also start of the fire pumps. Although these Reactor Building hose stations are manual and plant personnel are trained to report a fire before fighting it, there are no administrative controls to ensure the deluge valve is activated as there are for the start of the electric motor driven fire pump(s). Therefore, these push buttons are tested. Any other pushbuttons provided at hose stations other than the Reactor Building for manual start of the fire pumps are not tested as part of this TIR. The 18 month frequency for accessible and Refueling Outage frequency for inaccessible areas was developed considering the scope and requirements of some tests and inspections can only be performed during a unit outage. Operating experience has shown these components routinely pass the TIR when performed on the 18 month/Refueling Outage frequency. Therefore, the frequency was concluded to be acceptable from a reliability standpoint, and is consistent with standard Technical Specification requirements.
- B.14.6.f TIR 14.6.f requires performance of a visual inspection of the fire hose stations that are in any inaccessible area to assure all required equipment is at the station and the station is not blocked or obstructed. The Refueling Outage frequency was developed considering that many tests and inspections can only be performed during a unit outage. Operating experience has shown these components routinely pass the TIR when performed on the Refueling Outage frequency. Therefore, the frequency was concluded to be acceptable from a reliability standpoint, and is consistent with standard Technical Specification requirements.
- B.14.6.g TIR 14.6.g requires removal of each fire hose for inspection of the hose condition and gaskets in the hose couplings. Degraded gaskets and/or hoses require replacement. Following inspection and gasket and/or hose replacement, the fire hose must be reracked, preferably at different folds. The 18 month or Refueling Outage frequency was developed considering that some areas can only be accessed during a unit outage, and is consistent with standard Technical Specification requirements.
- B.14.6.h TIR 14.6.h requires that fire hose, associated with fire hose stations identified in Table 14.6 and stored in a heated area, undergo a hydrostatic test once every three years. This hydrostatic test ensures that the hose is reliable and can withstand the working fire main pressure. Appropriate manufacturers' markings or initials and date by test personnel are sufficient to document this hydrostatic test. The manufacturers' markings are done in accordance with industry consensus standards. Initials and date by test personnel are sufficient to ensure proper controls are maintained. The frequency of three years is based upon regulatory guidelines, has been shown to be acceptable through operating experience, and is consistent with standard Technical Specification requirements.

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- B.14.6.i TIR 14.6.i verifies the Operability of each fire hose station valve by partially opening the hose station valve with limited water flow. In the case of selected areas such as the Reactor Building, this flow test can use air in order to address the ALARA concerns. The period of three years between tests is reasonable because the infrequent use of the fire hoses provides for little opportunity for physical degradation or buildup of silt or other obstructions. This surveillance frequency and criteria is consistent with standard Technical Specifications.
- B.14.6.j TIR 14.6.j verifies correct alignment during outages for each testable valve (except hose valves) in any inaccessible area in the fire hose station/standpipe system flow path and provides assurance that the proper flow paths will exist for hose station operation. The test is performed during each cold shutdown exceeding 24 hours unless the TIR was performed in the previous 92 days. The verification is to be performed each 92 days during extended outages. The frequency for the TIR is based on the assumption that the required valves cannot be tested until the plant is in cold shutdown for more than 24 hours. Valves that are locked, sealed, or otherwise secured in position need only be verified to be locked, sealed, etc. since these were verified to be in the correct position before locking, sealing, or securing. A frequency of 92 days during outages has been established and is more conservative than the inspection criteria established for primary system valves that are locked, sealed, etc. The expected frequency for this testing is each Refueling outage and is based on operating experience.



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### **BASES - OPERATING REQUIREMENTS (OR) FIRE HYDRANTS**

- B.14.7** Fire hydrants listed in Table 14.7, as part of the water suppression system, ensure that adequate fire suppression capability is available to provide coverage for selected portions of safety-related structures.

The Intake Pumping Station uses fire hydrants as a backup water source for fire hoses used in manual fire fighting. For the Diesel Generator Building's Conduit Interface Room, the fire hydrants are the primary and backup water source for fire hoses used in manual fire fighting.

- B.14.7.1** With one or more of the fire hydrants inoperable, the degree of fire protection provided to safety-related equipment and fire safe shutdown systems is degraded. Consequently, a backup source of fire hose protection must be supplied from the nearest Operable water supply whether it is another Operable fire hydrant or a hose station. This is done by providing a gated wye(s) at the nearest Operable water source. In some instances, the physical routing of fire hoses from the Operable water source to the inoperable fire hydrant may result in a recognizable hazard to operating personnel, plant equipment (e.g., breaching fire barriers), or the hose itself. In such cases, the hose will be appropriately stored at the Operable water source with the hose dedicated for hydrant use. The completion time of eight hours is reasonable since normally the responding fire brigade would bring additional fire hose. In addition, this hose is not for occupant use, but restricted for use by trained fire fighting personnel.
- B.14.7.2** Restoration of the equipment to Operable status within 28 days is reasonable considering the restraints to getting to (i.e., digging up) and restoring (i.e., cure time for concrete thrust blocks) the equipment involved.

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### **BASES - TESTING AND INSPECTION REQUIREMENTS (TIR) FIRE HYDRANTS**

- B.14.7.a TIR 14.7.a requires performance of a visual inspection of the fire hose equipment dedicated to support the use of fire hydrants for manual fire fighting. This assures all required equipment is at the assigned location and is available for use. The frequency of 92 days is considered reasonable in view of the infrequent use of the hose, and is consistent with operating experience.
- B.14.7.b TIR 14.7.b verifies the correct alignment for testable valves in any accessible area in the fire hydrant flow path and provides assurance that the proper flow paths will exist for fire hydrant operation. Valves that are locked, sealed, or otherwise secured in position need only be verified to still be locked, sealed, etc., since these were verified to be in the correct position prior to locking, sealing, or securing. This inspection does not require any testing or valve manipulation. Rather, it involves verification that those valves, capable of being mispositioned and preventing or inhibiting fire suppression activities, are in the correct position. A frequency of 92 days has been established and is more conservative than the inspection criteria in standard Technical Specifications for safety system valves that are locked, sealed, etc.
- B.14.7.c TIR 14.7.c this visual inspection ensures accessibility and condition of the fire hydrants. Fire hydrants are more likely subject to mechanical damage due to their normal locations. The six-month frequency is needed to ensure continued Operability. The frequency of six months is based on industry operating experience and is consistent with standard Technical Specification requirements.
- B.14.7.d TIR 14.7.d requires that fire hose dedicated to support fire hydrant use undergo a hydrostatic test once every 12 months. This hose is normally located on a motorized apparatus and will be periodically exposed to uncontrolled environmental conditions, mainly atmospheric temperature extremes. This hydrostatic test ensures that the hose is reliable and can withstand the working fire main pressure. Appropriate manufacturers' markings or initials and date by test personnel are sufficient to document this hydrostatic test. The manufacturers' markings are done in accordance with industry consensus standards. Initials and date by test personnel are sufficient to ensure proper controls are maintained. The frequency of 12 months is based upon regulatory guidelines, has been shown to be acceptable through operating experience, and is consistent with standard Technical Specification requirements and NFPA consensus standard 25 criteria.
- B.14.7.e TIR 14.7.e requires that fire hydrants be inspected and operated once every 12 months to ensure proper function and to flow water from the hydrant until perceptible foreign material has cleared. The frequency of 12 months is consistent with standard Technical Specification requirements and NFPA consensus standard 25 criteria.

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### BASES - OPERATING REQUIREMENTS (OR) FIRE-RATED ASSEMBLIES

- B.14.8 Fire-rated assemblies/fire barriers (including walls, floors, ceilings, penetration seals, fire doors, electrical raceway fire barrier systems [ERFBS] and radiant energy shields, and fire dampers that comprise the fire boundaries separating redundant safe shutdown components) or separating systems important to safe shutdown within a fire area ensure that fires will be confined or adequately retarded from spreading to adjacent portions of the facility prior to detection and extinguishment. Fire-rated assemblies/fire barriers are used in conjunction with other fire protection features such as fire detection and fire suppression systems. Thus, the completion times and compensatory action requirements vary based on the Operability of the other fire protection features. With the exception of electrical raceway fire barrier systems and radiant energy shields, fire-rated assemblies/fire barriers are depicted on drawings in Part VI of the FPR. Raceways requiring fire barriers or radiant energy shields are identified by raceway number in Part VI of the FPR.

In Modes 5 and 6 the locations where a continuous fire watch would be required may be combined and patrolled by a roving fire watch(es). While the plant is in cold shutdown or refueling there are fewer systems needed for maintaining cold shutdown. Roving fire watches provide an adequate level of coverage for these systems by ensuring that potential fire hazards are detected and corrected in a timely manner, or if a fire were to occur, ensuring that timely action is taken.

Additionally, during Modes 5 and 6, it will be necessary to breach some fire barriers for longer than 30 days. These breaches will be excluded from the 10CFR50.72 and 10CFR50.73 reviews. These fire barrier components that will be breached are as follows:

Reactor Building Equipment Hatch Shield Blocks  
Doors: A64 A65 A156 A164 A165

The exemption of the 10CFR50.72 and 10CFR50.73 reviews for those identified components that are breached to facilitate the outage for longer than 30 days is consistent with other nuclear station practices. Roving fire watches will be used until the breaches are restored.

Other than that specified above, the time requirements for correcting equipment problems of OR 14.8 will remain the same.

In addition, those fire rated assemblies/fire barriers that are not accessible due to being in long-term high radiation areas are evaluated in Part VII.

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B.14.8.1 The fire-rated assemblies/fire barriers are provided as a part of the defense-in-depth concept of fire protection. The degradation of an assembly/barrier is to be reviewed in concert with the other fire protection features available. Thus, this review produces the following:

- a. When the assembly/barrier is degraded and there is no fire detection designed to protect both sides of the assembly/barrier, the continuous fire watch is reasonable.
- b. When the assembly/barrier is degraded and there is fire detection designed to protect one side of the assembly/barrier, then a roving fire watch is reasonable.
- c. When the assembly/barrier is degraded and there is suppression and fire detection designed to protect both sides of the assembly/barrier, then no compensatory action is reasonable.

The Operability or inoperability of the suppression or fire detection does not need to be addressed in the cases of degraded assemblies/barriers. This is because of the fact that an inoperable suppression or fire detection system/feature that protects Operable safety-related and FSSD equipment has its own compensatory actions.

B.14.8.2 The completion time of 30 days is reasonable based on the curing time of common fire barrier materials.

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### BASES - TESTING AND INSPECTION REQUIREMENTS (TIR) FIRE-RATED ASSEMBLIES

B.14.8.a TIR 14.8.a ensures that fire doors are in the correct position, free to close, and the door is not damaged. NFPA consensus standards do not delineate specific frequencies for visual inspections of fire doors. Plant personnel are provided training in General Employee Training of the importance of maintaining fire doors closed and Operable. Plant fire doors are conspicuously identified as fire doors. Therefore, the 31 day frequency is considered acceptable.

B.14.8.b TIR 14.8.b requires a functional test of all associated release and closing mechanisms and latches on fire door assemblies to ensure fire door Operability. The frequency of 12 months is consistent with the guidance found in NFPA 80.

B.14.8.c TIR 14.8.c requires visual inspections of the surface areas of fire-rated barriers to verify Operability. Approximately twenty percent of the barriers will be inspected every 12 months to ensure that all barriers are inspected at least once every five years. Inspection of bellows, metal plates, ERFBS, or insulation covering a penetration seal, provides verification of the fire-rated assembly/fire barrier integrity, provided there is no apparent change in appearance or abnormal degradation. Inspections validate their functional integrity and ensure that fires will be confined or adequately retarded from spreading to adjacent portions of the facility.

The exposed surfaces of the fire-rated assembly/fire barrier will be visually inspected to ensure the integrity of the assembly. Fire dampers are part of the fire-rated assembly/fire barrier. Damper cycling is addressed in the WBN Preventative Maintenance Program. There will be no disassembly of equipment (e.g., removal of damming material, junction box covers, or conduit fitting covers) to perform this visual inspection. Documentation of these inspections will be based on the acceptability of the barrier or barrier portion (i.e., individual sign-offs for each penetration will not be required). The barrier acceptability is used since a failed assembly leads to the barrier being declared inoperable not just the assembly. The surveillance frequency and criteria are considered to be adequate since they are consistent with current industry practice of ensuring all barriers are inspected within 5 years. Although the Standard Technical Specifications call for the inspection of the exposed surfaces of each fire rated assemblies every 18 months, it only required 10% of the penetration seals to be inspected. This results in a delay of 15 years to review all penetration seals. These penetration seals are more susceptible to damage than concrete walls and thus fire safety is increased with the additional inspections.

B.14.8.d TIR 14.8.d requires Refueling Outage frequency visual inspection of approximately 33-1/3 percent of the surface area of fire rated assemblies/fire barriers to determine Operability. Inspection of bellows, metal plates, ERFBSs, radiant energy shields, or insulation covering a penetration seal, provides verification of the fire rated assembly/fire barrier integrity, provided there is not apparent change in appearance or abnormal degradation. Inspections validate their functional integrity and ensure that fires will be confined or adequately retarded from spreading to adjacent portions of the facility.

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The exposed surfaces of the fire-rated assembly/fire barrier will be visually inspected to ensure the integrity of the assembly. There will be no disassembly of equipment (e.g., removal of damming material, junction box covers, or conduit fitting covers) to perform this visual inspection. Documentation of these inspections will be based on the acceptability of the barrier or barrier portion (i.e., individual sign-offs for each penetration will not be required). The barrier acceptability is used since a failed assembly leads to the barrier being declared inoperable not just the assembly. The surveillance frequency and criteria are considered conservative since they exceed current industry practice of ensuring all barriers are inspected within 5 years. The frequency for inaccessible areas follows the criteria set out for inspections in accessible areas but adapted to the special circumstances associated with inaccessible areas.

## **PART II - FIRE PROTECTION PLAN**

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### **BASES - OPERATING REQUIREMENTS (OR) EMERGENCY BATTERY LIGHTING UNITS**

- B.14.9** Emergency battery lighting units are required to support a unit shutdown in the event of a fire and coincident loss of offsite power.

An ability to access and operate fire safe shutdown systems is required as well as the protection of such systems. This ability must be capable of being performed in conjunction with the loss of offsite power. To achieve this, emergency battery lighting units with 8 hour lighting capacity are provided.

- B.14.9.1** Section 14.9.1 uses the term "alternate battery lighting" for a temporary substitute for installed emergency battery lighting units. This "alternate battery lighting" generally refers to portable, hand-held lighting as addressed in Section 12.7, "Emergency Lighting" of this report.

- B.14.9.2** The restoration of the equipment to Operable in 14 days is reasonable based on the type of equipment that is out of service.

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### BASES - TESTING AND INSPECTION REQUIREMENTS (TIR) EMERGENCY BATTERY LIGHTING UNITS

B.14.9.a TIR 14.9.a verifies proper operation of Emergency Battery Lighting (EBL) units by simulating a loss of power. When manually actuated, normal AC power is interrupted to the EBL at the primary or secondary side of the step-down transformer. Thus, the EBL's ability to go from the float charge mode to the discharge mode is fully exercised. This functional test also demonstrates:

- 1) The EBL is configured for automatic operation and is not in the standby mode
- 2) The load transfer circuitry is functional
- 3) The lamps are functional
- 4) Continuity exists between the battery and all lamps
- 5) The battery is functional
- 6) The charging circuit is functional
- 7) The status indicators are functional

A visual inspection to assess the general condition of the EBL, to detect obvious signs of degradation, and to detect any damage to the unit that may affect Operability is included. The visual inspection can identify degradation mechanisms at an early stage, and in many cases, can warn personnel of an impending failure. Included is a visual inspection to identify electrolyte leakage, and for vented cells, to determine whether water addition is needed. Early detection of battery leakage allows battery replacement before the leakage results in complete battery failure or in severe damage to other EBL components.

The frequency of 92 days for accessible EBLs is based upon vendor recommendations and industry practice. Over time, the optimal inspection frequency will be driven by trending data.

The turbine building standby lighting is not tested as a part of the TIR.

B.14.9.b TIR 14.9.b requires that a battery is replaced periodically as a function of its service life, the environmental conditions the battery will experience, and a safety factor. The service life and the environmental factors are based on information from the manufacturer. This manufacturer's information plus the safety factor results in the frequencies as shown in chart.

B.14.9.c TIR 14.9.c requires that the EBL in inaccessible areas inside the Unit 1 Annulus be replaced each refueling outage and that the tests and inspection described under bases 14.9.a be performed to ensure EBL operability. This is being done due to the ALARA considerations in the Reactor Building and the limited accessibility during plant operation. The surveillance frequency and battery replacement is considered conservative and reasonable based on the fact that these are 15 year service life batteries that are being replaced on a refueling outage frequency.



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### BASES - TESTING AND INSPECTION REQUIREMENTS (TIR) EMERGENCY BATTERY LIGHTING UNITS

Type of Battery	Environmental Conditions* (ambient temperature)	Service Life (Years)	Replacement Frequency (Years)
Sealed lead acid and calcium alloy	constantly below 95°F	8	5
		15	8
		20	11
Sealed lead acid and calcium alloy	constantly above 95°F	8	3
		15	6
		20	8
Sealed lead acid and calcium alloy	Unit 1 Annulus	15**	Refueling Outage
Solid gel	constantly below 95°F	4	3
Solid gel	constantly above 95°F	4	2

\* Based on site environmental drawings for average temperature during normal operation.

\*\*The 15 year service life is for the existing Exide LEC-36. Replacement battery (Sentry PM 6420) has a service life of 8 years. Replacement EBL (Lightguard F-100 w/LC-361 battery) has a service life of 20 years. Regardless of the battery/EBL combination used, the replacement frequency is every refueling outage for batteries in the Unit 1 Annulus.

The replacement method is preferred for the accessible EBL since a periodic, deep discharge (8 hour) test is not recommended by the manufacturer. The refueling outage replacement for inaccessible EBLs is preferred due to ALARA considerations and very limited access to the Reactor Building during operations which means that inspection and testing would only be practical during outages. The frequency and criteria is based on vendor recommendations. The turbine building standby lighting is not tested as a part of the TIR.

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### BASES - OPERATING REQUIREMENTS (OR) FIRE SAFE SHUTDOWN EQUIPMENT

- B.14.10 A minimum set of plant systems and components has been identified at WBN to ensure that the plant can achieve and maintain safe shutdown in the event of plant fires (see Part III, Safe Shutdown Capabilities). In the majority of cases the identified plant systems and components are addressed by WBN Technical Specifications and Technical Requirements Manual which list surveillance requirements for verifying the Operability of the systems and components. This OR lists the systems and components which are not included as part of a Technical Specification or Technical Requirement.

Thermal overloads that are by-passed during accident conditions must remain operable during normal plant operation. This will ensure that valves that are required for a Control Building fire are not damaged due to a hot short that could by-pass the torque switch. In addition, the thermal overloads are required for limiting current flow in the event of fire induced multiple high impedance faults and documented in the Multiple High Impedance Fault Analysis. The Technical Requirements Manual, Table 3.8.3-1, "Motor-Operated Valves Thermal Overload Devices Which Are Bypassed Under Accident Conditions" provides the list of thermal overloads this statement addresses.

This OR is provided to ensure that systems and components which are required for safe shutdown are maintained operable and tested to ensure operability. The intent of this OR is to ensure the equipment listed in Table 14.10 is capable of performing its FSSD function. To ensure this, equipment listed in Table 14.10 shall satisfy the FSSD Condition listed by being Operable, capable of achieving its FSSD Condition, or in its FSSD Condition. The equipment listed in Table 14.10 is considered inoperable when it is not in or can not achieve its listed FSSD Condition. The actions are based on Technical Specifications 3.3.4, Remote Shutdown System.

- B.14.10.1 With a safe shutdown component shown in Table 14.10 inoperable, the inoperable component must be restored within 30 days when the unit is in modes 1, 2, or 3.
- B.14.10.2 With a breaker and/or valve specified in design output documents as being administratively controlled for Appendix R out of it's required position (as noted on the drawing), the breaker and/or valve must be returned to the required position within 30 days when the unit is in Modes 1, 2, or 3. These breakers and/or valves are administratively controlled to prevent inadvertent operation during an Appendix R fire event. There is no TIR associated with the OR since the valves and/or breaker positions are controlled by the applicable System Operating Instruction and the plant's configuration control program.

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- B.14.10.3** If the required action and associated completion time are not met, the plant must be placed in a condition where the OR does not apply. If possible, the inoperable or misconfigured component can be placed in the condition required for safe shutdown (i.e., close a valve, shutdown a pump, lock open a breaker), or a backup instrument can be provided for monitoring temperature, flow, or pressure. If this cannot be accomplished, an evaluation can be performed to justify using an alternate means to achieve compliance with Appendix R FSSD requirements. The plant's Temporary Control and Alteration process (TACF) along with a 10CFR50.59 review can also be used to provide the alternate means of FSSD compliance. If none of the above actions can be accomplished, the unit must be brought to at least Mode 3 within 6-hours and to Mode 4 within the following 12-hours.

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### BASES - TESTING AND INSPECTION REQUIREMENTS (TIR) FIRE SAFE SHUTDOWN EQUIPMENT

- B.14.10.a TIR 14.10.a is performance of a terminal voltage check and on alignment check of the plant's 250 VDC Batteries 1 and 2. This provides assurance that the batteries are operable and aligned to the appropriate DC bus. This check will be performed at least once every 31 days when the plant is in modes 1, 2, or 3.
- B.14.10.b TIR 14.10.b is performance of a breaker alignment check for the 250 VDC Battery Boards 1 and 2 and Distribution Panels 1 and 2. This check provides assurance that breakers which supply control power to steam load trip circuits and RCP breaker trip circuits are aligned properly. This check will be performed at least once every 31 days when the plant is in modes 1, 2, or 3.
- B.14.10.c TIR 14.10.c verifies every 18 months that main steam system valves are capable of being closed via Main Control Room switch or locally by manual operation of the valve. This verifies that each valve operates properly to ensure the isolation of main steam loads should main steam isolation valves become inoperable in the event of a fire damage. The valves are tested every 18 months when the unit is shutdown since operation of the valve via the hand switch during operation can cause a reactor trip.
- B.14.10.d TIR 14.10.d is performance of a channel calibration on instruments required for safe shutdown. Many of these instruments are required for local operation of plant systems and components during a fire event. The performance of the calibration ensures the accuracy of these instruments should they be required for use. This calibration is performed once per 18 months.
- B.14.10.e TIR 14.10.e is performance of in-service testing for CCS pump 2B-B under the augmented in-service testing program. This pump is needed to support Unit 1 fire safe shutdown requirements. The augmented in-service testing program requires a flow verification at least once per 92 days to ensure that the pump is operable.
- B.14.10.f TIR 14.10.f verifies every 92 days that RCS Pressurizer Spray Valves are capable of being closed from the Main Control Room controller. The valves are tested every 92 days (quarterly) in accordance with the augmented in-service testing program.
- B.14.10.g TIR 14.10.g verifies every 18 months that the Control Rod Drive Cooler Motors and associated dampers operate properly from MCR controls. The CRDM Coolers and dampers are tested every 18 months when the unit is shutdown since these coolers are normally in operation during unit operation. Also, cycling these coolers on and off during plant operation could have an adverse effect on the Rod Position Indication System.

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B.14.10.h TIR 14.10.h verifies every 18 months that the Generator Control System Solenoid can be operated from its associated hand switch in the MCR. This test is performed every 18 months when the unit is shutdown since operation of this solenoid will cause a unit trip. The solenoid is tested every 18 months as part of the Technical Requirements Surveillance Program.

B.14.10.i TIR 14.10.i verifies every 18 months that the Lower Compartment Cooler System Temperature Control Valves (TCVs) operate properly from MCR controls. The TCVs are tested every 18 months when the unit is shutdown since these coolers are required for Containment cooling during unit operation.

B.14.10.j TIR 14.10.j.a verifies every 31 days that the nitrogen tanks have the quantity and pressure of nitrogen required for operation of the valves. This check will be performed at least once every 31 days when the plant is in modes 1, 2 or 3.

TIR 14.10.j.b verifies every 18 months that the SG PORVs and AFW LCVs can be operated properly from backup control stations using the compressed nitrogen. The PORVs and LCVs are tested every 18 months when the unit is shutdown since these valves are required to be operable per plant Technical Specifications when the plant is in operating modes 1 through 4 and testing these valves utilizing the nitrogen system would make the valves inoperable.

B.14.10.k TIR 14.10.k verifies every 92 days that the Auxiliary Control Air Compressors are capable of starting automatically if the air receiver pressure drops below a pre-established setpoint. Re-establishing and maintaining system pressure ensure adequate capacity to meet the needs of the small set of components credited for remote pneumatic operation during Fire Safe Shutdown.

B.14.10.l TIR-14.10.l is for tracking only. The thermal overload bypass devices are tested by the Technical Requirements Manual and no further testing is needed. The concern for the FPR is for the overloads to be bypassed and thus defeating their protection features as addressed in the bases to OR-14.10. This provides a method for the surveillance program to ensure OR-14.10 is entered should the associated tests not be performed and the overloads are bypassed.

B.14.10.m TIR 14.10.m verifies every 18 months that the CREATCS Appendix R transfer switches (0-XS-31-12-A and 0-XS-31-11-B) function as intended by the performance of a continuity check. This will ensure that CREATCS is available for local control during an Appendix R fire that takes out the normal control circuit. The continuity test is consistent with the surveillance requirements for other safety-related transfer switches (reference Technical Specification Bases SR3.3.4.2) .

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**TABLE 14.1 FIRE DETECTION INSTRUMENTATION**  
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<b>A. Diesel Generator Building</b>		<b>Total Number of Instruments **</b>	
<b>ZONE</b>	<b>INSTRUMENT LOCATION</b>	<b>HEAT (A/B)</b>	<b>SMOKE (A/B)</b>
1	Diesel Gen. Rm. 2B-B, El. 742	0/5	
2	Diesel Gen. Rm. 2B-B, El. 742	0/5	
3	Diesel Gen. Rm. 1B-B, El. 742	0/5	
4	Diesel Gen. Rm. 1B-B, El. 742	0/5	
5	Diesel Gen. Rm. 2A-A, El. 742	0/5	
6	Diesel Gen. Rm. 2A-A, El. 742	0/5	
7	Diesel Gen. Rm. 1A-A, El. 742	0/5	
8	Diesel Gen. Rm. 1A-A, El. 742	0/5	
9	Lube Oil Storage Rm., El. 742	0/1	
10	Lube Oil Storage Rm., El. 742	0/1	
11	Fuel Oil Transfer Rm., El. 742	0/1	
12	Fuel Oil Transfer Rm., El. 742	0/1	
13	Diesel Gen. Corridor, El. 742		0/6
14	Air Intake & Exhaust Rm. 2B, El. 760	10/0	
15	Air Intake & Exhaust Rm. 1B, El. 760	10/0	
16	Air Intake & Exhaust Rm. 2A, El. 760	10/0	
17	Air Intake & Exhaust Rm. 1A, El. 760	10/0	
18	Diesel Gen. 2B-B Relay Bd. El. 742		3/0
19	Diesel Gen. 1B-B Relay Bd. El. 742		3/0
20	Diesel Gen. 2A-A Relay Bd. El. 742		3/0
21	Diesel Gen. 1A-A Relay Bd. El. 742		3/0
22	Diesel Gen. Board Rm. 2B-B, El. 760	0/2	
23	Diesel Gen. Board Rm. 2B-B, El. 760		0/2
24	Diesel Gen. Board Rm. 1B-B, El. 760	0/2	
25	Diesel Gen. Board Rm. 1B-B, El. 760		0/2
26	Diesel Gen. Board Rm. 2A-A, El. 760	0/2	
27	Diesel Gen. Board Rm. 2A-A, El. 760		0/2
28	Diesel Gen. Board Rm. 1A-A, El. 760	0/2	
29	Diesel Gen. Board Rm. 1A-A, El. 760		0/2
36	DGB Tr B Conduit Entry, El. 742		0/1
37	DGB Tr A Conduit Entry, El. 742		0/1
432	DGB Conduit Interface Room		9/0

\*\* - See Table Notation , Page 10 of 10

# **PART II - FIRE PROTECTION PLAN**

Rev. 22

**TABLE 14.1 FIRE DETECTION INSTRUMENTATION**  
(PAGE 2 OF 10)

<b>B. Control Building</b>		<b>Total Number of Instruments **</b>	
<b>ZONE</b>	<b>INSTRUMENT LOCATION</b>	<b>HEAT (A/B)</b>	<b>SMOKE (A/B)</b>
30	Cable Spreading Rm. C7-C11, El. 729		0/15
31	Cable Spreading Rm. C7-C11, El. 729		0/15
32	Cable Spreading Rm. C7-C11, El. 729		0/15
33	Cable Spreading Rm. C7-C11, El. 729		0/15
34	Cable Spreading Rm. C3-C7, El. 729		0/15
35	Cable Spreading Rm. C3-C7, El. 729		0/15
48	Control Bldg. Corridor, El. 692		0/4
49	Control Bldg. Corridor, El. 692		0/4
50	Mech. Equip Rm., Col. C1, El. 692		0/2
51	Mech. Equip Rm., Col. C1, El. 692		0/2
52	Mech. Equip Rm., Col. C3, El. 692		0/2
53	Mech. Equip Rm., Col. C3, El. 692		0/2
54	Battery Rm., El. 692		0/3
55	Battery Rm., El. 692		0/3
56	Battery Bd. Rm., El. 692		2/0
57	Battery Bd. Rm., El. 692		2/0
58	Battery Bd. Rm., El. 692		2/0
59	Battery Bd. Rm., El. 692		2/0
60	Battery Rm., El. 692		0/3
61	Battery Rm., El. 692		0/3
62	Battery Rm., El. 692		0/3
63	Battery Rm., El. 692		0/3
64	Battery Bd. Rm., El. 692		2/0
65	Battery Bd. Rm., El. 692		2/0
66	Communications Rm., El. 692		0/4
67	Communications Rm., El. 692		0/4
68	Mech. Equip Rm., Col. C11, El. 692		0/2
69	Mech. Equip Rm., Col. C11, El. 692		0/2
149	Cable Spreading Rm. C3-C7, El. 729		0/15
150	Cable Spreading Rm. C3-C7, El. 729		0/15
214	Mech. Equip Rm., Col. C1-C2, El. 755		0/5
215	Mech. Equip Rm., Col. C1-C2, El. 755		0/5
216	CR Fltr. B, Duct Det., El. 755		0/1
217	CR Fltr. B, Duct Det., El. 755		0/1
(continued)			

\*\* - See Table Notation , Page 10 of 10

# **PART II - FIRE PROTECTION PLAN**

Rev. 22

**TABLE 14.1 FIRE DETECTION INSTRUMENTATION**  
(PAGE 3 OF 10)

<b>B. Control Building (continued)</b>		<b>Total Number of Instruments **</b>	
<b>ZONE</b>	<b>INSTRUMENT LOCATION</b>	<b>HEAT (A/B)</b>	<b>SMOKE (A/B)</b>
218	CR Filtr. A, Duct Det., El. 755		0/1
219	CR Filtr. A, Duct Det., El. 755		0/1
220	Main CR, El. 755		27/0
221	Tech Support Center, El. 755		0/6
222	Tech Support Center, El. 755		0/6
223	PSO Eng. Shop, El. 755		0/1
224	PSO Eng. Shop, El. 755		0/1
225	Relay Bd. Rm., El. 755		11/0
226	Electric Cont. Bds., El. 755		12/0
227	Operation Living Area, E. 755	0/4	0/4
228	Operation Living Area, E. 755		0/8
229	Main Control Bds., El. 755		8/0
267	Aux. Instr. Rm., Unit 1, El. 708		0/8
268	Aux. Instr. Rm., Unit 1, El. 708	0/10	
269	Computer Rm., El. 708		0/4
270	Computer Rm., El. 708	0/4	
271	Aux. Instr. Rm., Unit 2, El. 708		0/8
272	Aux. Instr. Rm., Unit 2, El. 708	0/10	
273	Computer Rm. Corridor, El. 708		3/0
298	Common Main Cont. Bds. & M15, El. 755		12/0
387	Control/Turbine Bldg. Wall	0/26	
412	Duplex Relay Bds., El. 755		4/0

\*\* - See Table Notation , Page 10 of 10



**PART II - FIRE PROTECTION PLAN**

Rev. 22

**TABLE 14.1 FIRE DETECTION INSTRUMENTATION**  
(PAGE 4 OF 10)

<b>C. Auxiliary Building</b>		<b>Total Number of Instruments **</b>	
<b>ZONE</b>	<b>INSTRUMENT LOCATION</b>	<b>HEAT (A/B)</b>	<b>SMOKE (A/B)</b>
39	Cont. Spray Pump 1A-A, El. 676		2/0
40	Cont. Spray Pump 1B-B, El. 676		2/0
43	RHR Pump 1A-A, El. 676		2/0
44	RHR Pump 1B-B, El. 676		2/0
47	Corridor of Aux. Bldg., El. 676		11/0
70	A5-A11, Col. W-X, El. 692		0/6
71	A5-A11, Col. W-X, El. 692		0/6
72	Aux. FW Pump Turbine 1A-S, El. 692		0/1
73	Aux. FW Pump Turbine 1A-S, El. 692		0/1
76	S.I & Charging Pump Rms., El. 692		0/5
77	S. I. Pump Rm. 1A, El. 692		0/1
78	S. I. Pump Rm. 1B, El. 692		0/1
79	Charging Pump Rm. 1C, El. 692		0/1
80	Charging Pump Rm. 1B, El. 692		0/1
81	Charging Pump Rm. 1A, El. 692		0/1
88	Aux. Bldg. Corridor A1-A8, El. 692		0/8
89	Aux. Bldg. Corridor A1-A8, El. 692		0/8
90	Aux. Bldg. Corridor A8-A15, El. 692		0/12
91	Aux. Bldg. Corridor A81-A15, El. 692		0/12
92	Aux. Bldg. Corridor U-W, El. 692		0/4
93	Aux. Bldg. Corridor U-W, El. 692		0/4
94	Pipe Gallery, El. 692		0/2
95	Pipe Gallery, El. 692		0/2
98	Cntmt. Purge Air Fltr., A & B, Duct Det., El. 713		0/2
99	Cntmt. Purge Air Fltr., A & B, Duct Det., El. 713		0/2
102	Pipe Gallery, El. 713		0/4
103	Pipe Gallery, El. 713		0/4
106	Aux. Bldg. Corridor A5-11, Col. T-W, El. 713		0/8
107	Aux. Bldg. Corridor A5-11, Col. T-W, El. 713		0/8
108	Radio Chemical Lab. Area, El. 713		0/3
109	Radio Chemical Lab. Area, El. 713		0/3
110	Aux. Bldg. A1-A8, Col. Q-U, El. 713		0/24
(continued)			

\*\* - See Table Notation , Page 10 of 10

# **PART II - FIRE PROTECTION PLAN**

Rev. 24

**TABLE 14.1 FIRE DETECTION INSTRUMENTATION**  
(PAGE 5 OF 10)

<b>C. Auxiliary Building (continued)</b>		<b>Total Number of Instruments **</b>	
<b>ZONE</b>	<b>INSTRUMENT LOCATION</b>	<b>HEAT (A/B)</b>	<b>SMOKE (A/B)</b>
111	Aux. Bldg. A1-A8, Col. Q-U, El. 713		0/22
112	Aux. Bldg. A8-A15, Col. Q-U, El. 713		0/15
113	Aux. Bldg. A8-A15, Col. Q-U, El. 713		0/15
114	Waste Packaging Area, El. 729		0/3
115	Waste Packaging Area, El. 729		0/3
116	Cask Loading Area, El. 729	0/2	
117	Cask Loading Area, El. 729	0/2	
118	New Fuel Storage Area		4/0
120	Aux. Bldg. Gas Trtmt. Fltr., U1, El. 737		0/1
121	Aux. Bldg. Gas Trtmt. Fltr., U1, El. 737		0/1
123	Vol. Control Tank Rm. 1A, El. 713		0/3
125	Vol. Control Tank Rm. 1A, El. 713		0/3
128	Post Accident Samp. Fac. U1, El. 729		0/3
129	Post Accident Samp. Fac. U1, El. 729		0/3
130	Ventilation & Purge Air Rm., U2, El. 737		0/5
131	Ventilation & Purge Air Rm., U2, El. 737		0/5
132	Ventilation & Purge Air Rm., U2, El. 737		0/5
133	Ventilation & Purge Air Rm., U2, El. 737		0/5
134	Aux. Bldg. A5-A11, Col. U-W, El. 737		0/7
135	Aux. Bldg. A5-A11, Col. U-W, El. 737		0/7
136	Heating & Vent Rm., U1, El. 737		0/5
137	Heating & Vent Rm., U1, El. 737		0/5
138	Heating & Vent Rm., U2, El. 737		0/5
139	Heating & Vent Rm., U2, El. 737		0/5
140	Hot Instrument Shop, El. 737		0/1
141	Hot Instrument Shop, El. 737		0/1
142	Aux. Bldg. A1-A8, Col. Q-U, El. 737		0/13
143	Aux. Bldg. A1-A8, Col. Q-U, El. 737		0/13
144	Aux. Bldg. A8-A15, Col. Q-U, El. 737		0/10
145	Aux. Bldg. A8-A15, Col. Q-U, El. 737		0/10
146	N <sub>2</sub> Storage, El. 729		4/0
147	Aux. Bldg Gas Trtmt. Fltr, U2, El. 737		0/1
			(continued)

\*\* - See Table Notation , Page 10 of 10

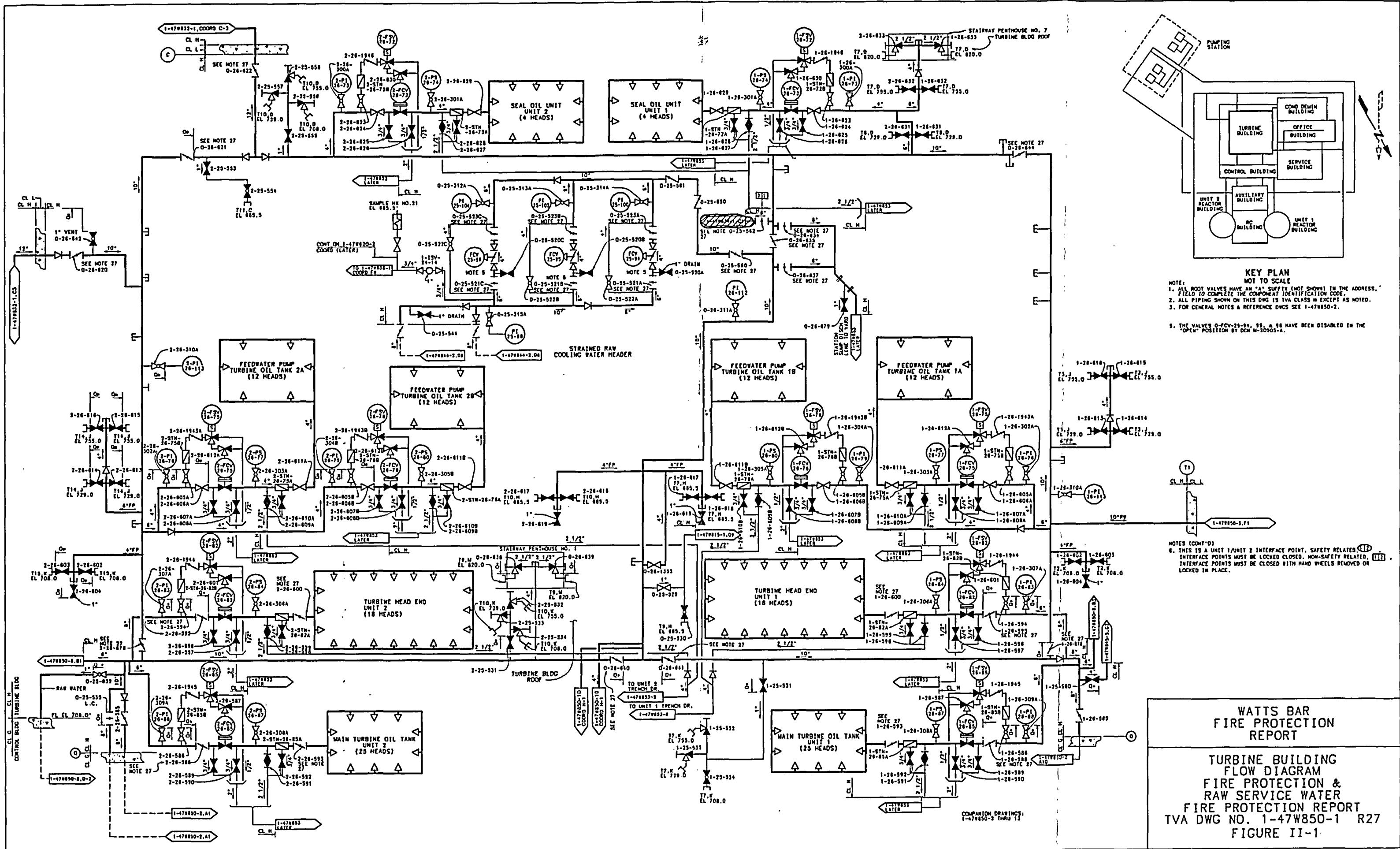
**PART II - FIRE PROTECTION PLAN**

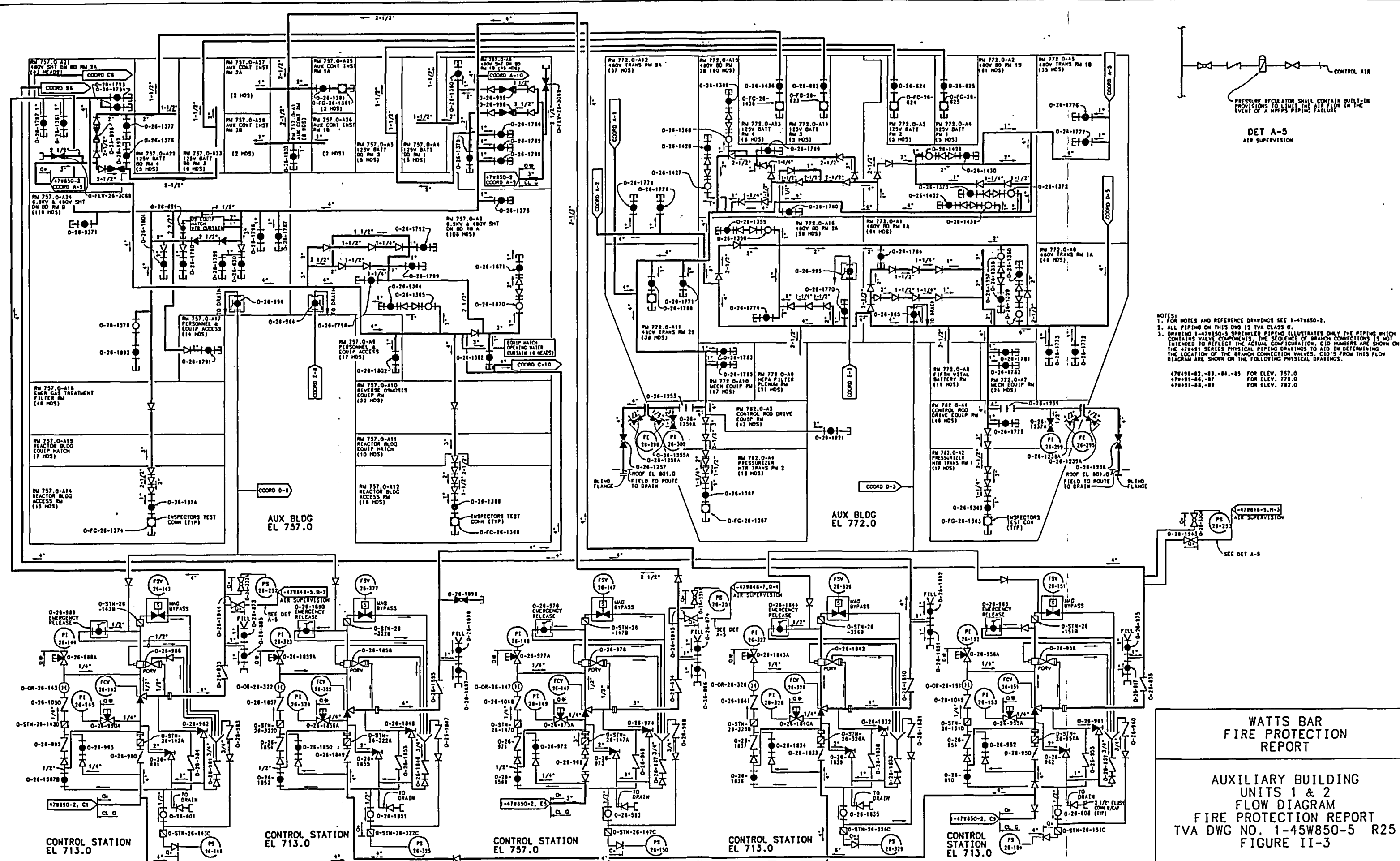
Rev. 27

**TABLE 14.1 FIRE DETECTION INSTRUMENTATION**  
(PAGE 6 OF 10)

<b>C. Auxiliary Building (continued)</b>		<b>Total Number of Instruments **</b>	
<b>ZONE</b>	<b>INSTRUMENT LOCATION</b>	<b>HEAT (A/B)</b>	<b>SMOKE (A/B)</b>
148	Aux. Bldg Gas Trtmt. Fltr, U2, El. 737		0/1
156	Reactor Bldg. Access Rm., El. 757		0/2
157	Reactor Bldg. Access Rm., El. 757		0/2
160	Spare Room (Reverse Osmosis), El. 757, A4-V		0/4
161	Spare Room (Reverse Osmosis), El. 757, A4-V		0/4
162	EGTS Rm., El. 757		0/3
163	EGTS Rm., El. 757		0/3
164	EGTS Fltr. A, El. 757		0/1
165	EGTS Fltr. A, El. 757		0/1
166	EGTS Fltr. B, El. 757		0/1
167	EGTS Fltr. B, El. 757		0/1
168	Reactor Bldg. Equip. Hatch, El. 757 Unit 1		0/1
169	Reactor Bldg. Equip. Hatch, El. 757 Unit 1		0/1
170	Reactor Bldg. Equip. Hatch, El. 757 Unit 2		0/1
171	Reactor Bldg. Equip. Hatch, El. 757 Unit 2		0/1
172	Unit 1 Mech. Eqpt. Rm., El. 757		0/1
173	Unit 1 Mech. Eqpt. Rm., El. 757		0/1
174	Unit 2 Mech. Eqpt. Rm., El. 757		0/1
175	Unit 2 Mech. Eqpt. Rm., El. 757		0/1
176	480V Shtdn Bd. Rm. 1A1, El. 757		0/2
177	480V Shtdn Bd. Rm. 1A1, El. 757		0/2
178	480V Shtdn Bd. Rm. 1A2, El. 757		0/2
179	480V Shtdn Bd. Rm. 1A2, El. 757		0/2
180	480V Shtdn Bd. Rm. 1B1, El. 757		0/2
181	480V Shtdn Bd. Rm. 1B1, El. 757		0/2
182	480V Shtdn Bd. Rm. 1B2, El. 757		0/3
183	480V Shtdn Bd. Rm. 1B2, El. 757		0/3
184	6.9 kV Shtdn. Bd. Rm. A, El. 757		0/7
185	6.9 kV Shtdn. Bd. Rm. A, El. 757		0/7
186	6.9 kV Shtdn. Bd. Rm. B, El. 757		0/7
187	6.9 kV Shtdn. Bd. Rm. B, El. 757		0/7
188	480V Shtdn Bd. Rm. 2A1, El. 757		0/2
189	480V Shtdn Bd. Rm. 2A1, El. 757		0/2
190	480V Shtdn Bd. Rm. 2A2, El. 757		0/3
(continued)			

\*\* - See Table Notation , Page 10 of 10





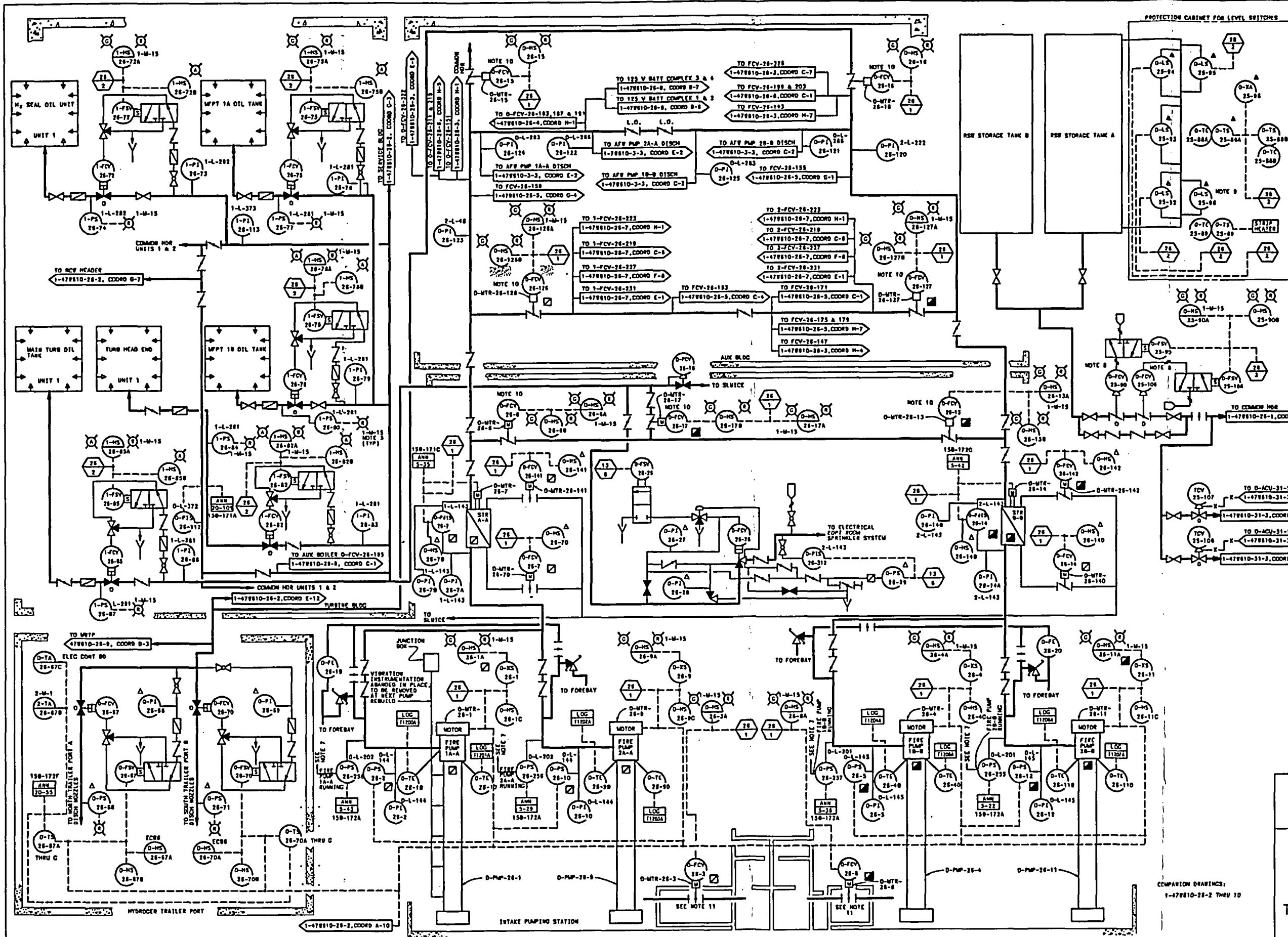
NOTES:  
1. FOR NOTES AND REFERENCE DRAWINGS SEE 1-47W850-2.  
2. ALL PIPING ON THIS DWG IS TYP CLASS C.  
3. DRAWING 1-47W850-5 SPRINKLER PIPING ILLUSTRATES ONLY THE PIPING WHICH CONTAINS VALVE COMPONENTS. THE SEQUENCE OF BRANCH CONNECTIONS IS NOT INTENDED TO REFLECT THE ACTUAL CONFIGURATION. C/D NUMBERS ARE SHOWN ON THE 47W850-1 SERIES PHYSICAL PIPING DRAWINGS TO AID IN DETERMINING THE LOCATION OF THE BRANCH CONNECTION VALVES. C/D'S FROM THIS FLOW DIAGRAM ARE SHOWN ON THE FOLLOWING PHYSICAL DRAWINGS.

47W850-82, -83, -84, -85 FOR ELEV. 757.0  
47W850-86, -87 FOR ELEV. 772.0  
47W850-88, -89 FOR ELEV. 782.0

WATTS BAR  
FIRE PROTECTION  
REPORT

AUXILIARY BUILDING  
UNITS 1 & 2  
FLOW DIAGRAM  
FIRE PROTECTION REPORT  
TVA DWG NO. 1-45W850-5 R25  
FIGURE II-3

CAD MAINTAINED DRAWING



(NOT USED FOR UNIT 1 OPERATION)

NOTES:

1. FIRE IN EITHER THE OXYGEN, ACETYLENE, OR OIL STORAGE ROOM WILL CAUSE WATER FOG TO BE SPRAYED IN ALL THREE ROOMS.
2. STATIC WATER HEAD IS SUPPLIED TO THE SYSTEM FROM THE RAY SERVICE WATER TANK FOR EXTINGUISHING A FIRE UNTIL THE FIRE PUMP STARTS.
3. THE HIGH-PRESSURE FIRE-PROTECTION SYS CONSISTS OF "AUTOMATIC" AND "MANUAL" FUNCTIONS. THE AUTOMATIC FUNCTION (I.E., HYDROGEN TRAILER PORT) ARE TRIGGERED BY TEMPERATURE DETECTORS WHICH INITIATE THE FLOW OF WATER TO THE SPRAY DISCHARGE NOZZLES. THE MANUAL FUNCTIONS ARE INITIATED BY LOCAL PUMP START SWITCHES WHICH INITIATE THE FLOW OF WATER TO THE FIRE HOSES AND HYDRANTS.
4. ALL LIGHTS SHOWN CONNECTED TO PRESSURE SWITCHES ARE MOUNTED ON ASSOCIATED HANDS/STITCHES LOCATED ON M-15 PANEL.
5. FOR INSTRUMENTS THAT FALL UNDER THE LISTED FIRE PROTECTION QUALITY ASSURANCE PROGRAM REFER TO THE 478601-26-SERIES.
6. INPUT TO MICROLOGICAL CORROSION (MIC) REMOVAL SYSTEM SUPPLIED ON CONTRACT 5794-7554A, UDC JMC50001.
7. VALVES REFERENCING THIS NOTE HAVE HAD POWER DISCONNECTED BECAUSE RAW WATER STORAGE TANKS ARE ISOLATED (PER 08P920233).
8. LEVEL SWITCH O-L-5-25-98 HAS BEEN DISCONNECTED.
9. VALVES REFERENCING THIS NOTE ARE ADMINISTRATIVELY LOCKED IN THE OPEN POSITION WITH THE BREAKER CLOSED AND THE THERMAL OVERLOADS REMOVED FOR APPROX. 8.
10. VALVES REFERENCING THIS NOTE ARE ADMINISTRATIVELY LOCKED IN THE CLOSED POSITION WITH THE BREAKER CLOSED AND THE THERMAL OVERLOADS REMOVED.
11. O-FCV-26-003-A AND O-FCV-26-008-B ARE ADMINISTRATIVELY LOCKED IN THE CLOSED POSITION WITH THE BREAKER CLOSED AND THE THERMAL OVERLOADS REMOVED.

SYMBOLS:

- PRESSURE REGULATOR WITH FILTER. PRESSURE SET TO BE DETERMINED BY MANUFACTURER'S REQUIREMENT FOR THE DEVICE BEING SUPPLIED.
- △ DEVICE MOUNTED LOCALLY ON EQUIPMENT OR MOUNTED ON P.C.E.

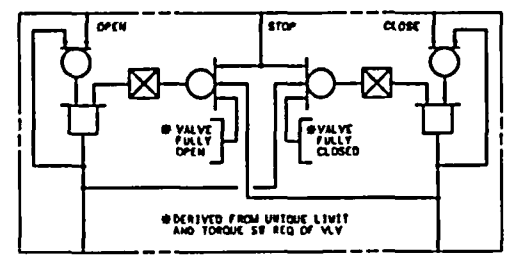
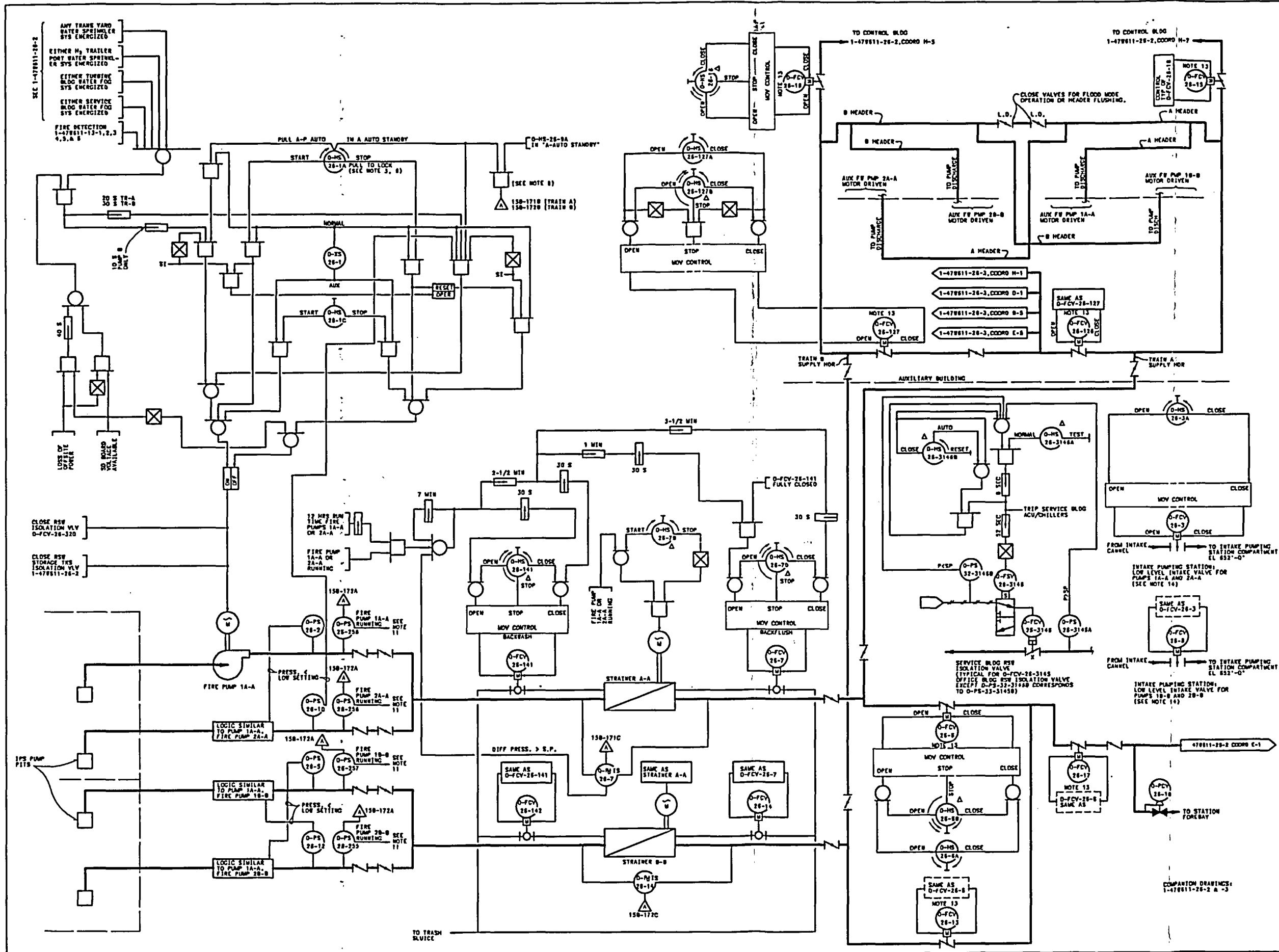
REFERENCES:

- 478601-26-SERIES---INSTRUMENT TABULATION
- 478611-26-1 THRU 3---LOGIC DIAGRAM, HP FIRE PROTECTION SYS
- 478621-26-1 THRU 3---FLOW DIAGRAM, HP FIRE PROTECTION SYS--YARD
- 478631-26-1 THRU 3---DESIGN CRITERIA FOR FIRE PROTECTION SYS
- 478640-1 THRU 10---FLOW DIAGRAM HP FIRE PROTECTION SYS

WATTS BAR  
FIRE PROTECTION  
REPORT

POWERHOUSE & YARD  
ELECTRICAL CONTROL DIAGRAM  
HIGH PRESSURE FIRE  
PROT SYS  
FIRE PROTECTION REPORT  
TVA DWG NO. 1-47W610-26-1 R25  
FIGURE II-13

CAD MAINTAINED DRAWING

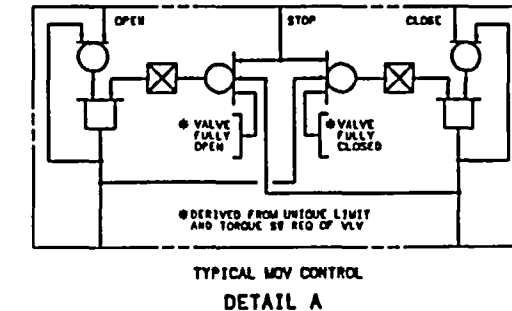
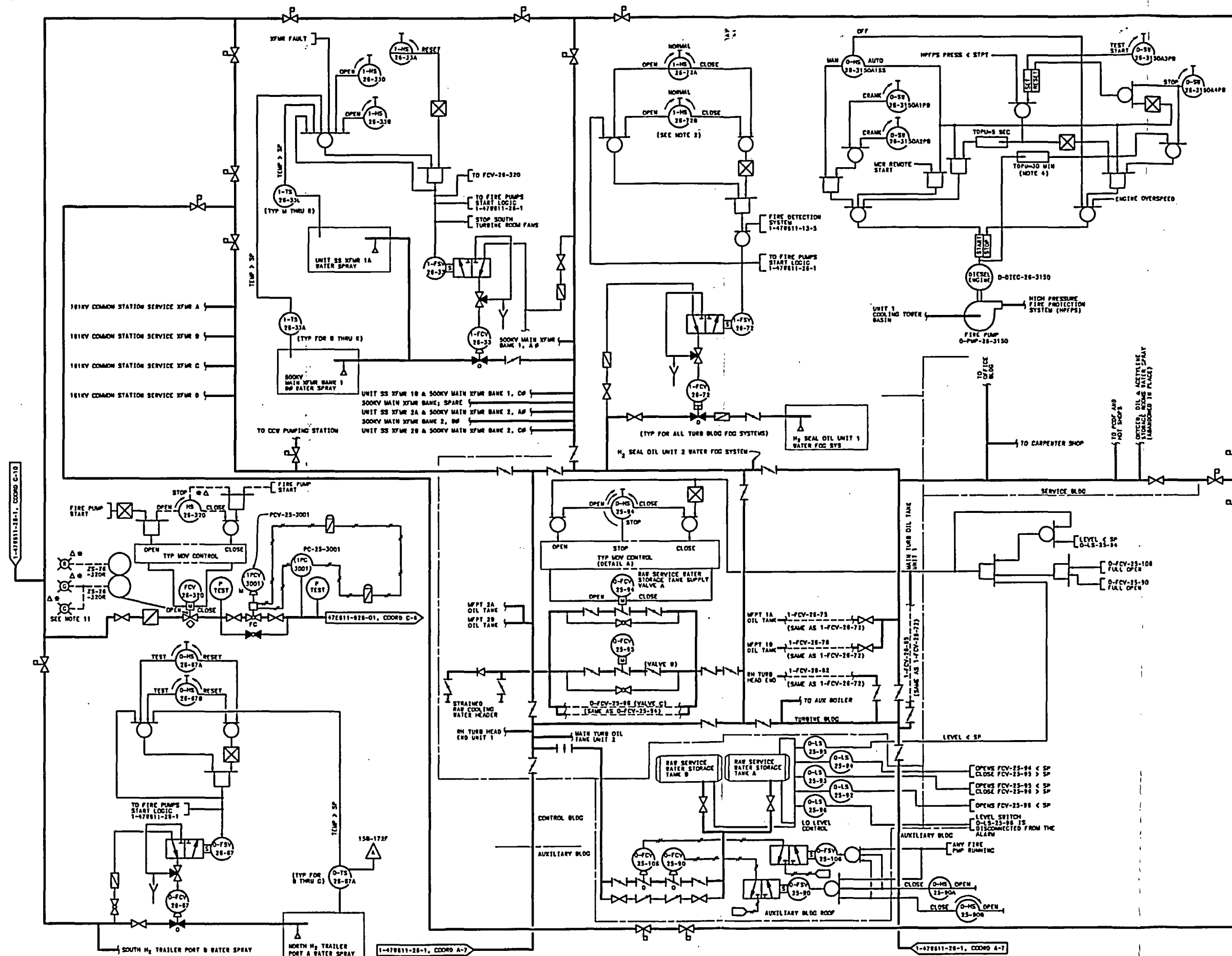


- NOTES:**
1. FOR SYMBOLS SEE INSTRUMENTATION AND IDENTIFICATION STANDARDS LATEST ISSUE.
  2. FOR COMPLETE INSTRUMENTATION AND COMPONENT TRAIN SEPARATION DESIGNATION SEE CONTROL DIAGRAM, 1-47W611-26-1.
  3. FOR NORMAL OPERATION THE MAIN CONTROL SWITCH FOR ONE TRAIN A FIRE PUMP AND ONE TRAIN B FIRE PUMP WILL BE IN THE A-P AUTO POSITION. THE MAIN CONTROL SWITCHES FOR THE OTHER TWO FIRE PUMPS WILL BE IN THE A-AUTO STAND-BY POSITION.
  4. ALL MAIN CONTROL ROOM R-2 TYPE SWITCHES ON THIS SHEET HAVE A PULL-TO-LOCK IN THE STOP POSITION AND ARE ANNUATED FOR THIS CONDITION.
  5. IF BOTH TRAIN A OR BOTH TRAIN B MAIN CONTROL ROOM FIRE PUMP CONTROL SWITCHES ARE IN THE "A AUTO STAND-BY" POSITION, AN ANNUNCIATOR ALERTS THE OPERATOR OF A FIRE PUMP SWITCH MISALIGNMENT.
  6. FOR INSTRUMENTS THAT FALL UNDER THE LIMITED FIRE PROTECTION QUALITY ASSURANCE PROGRAM REFER TO THE 47W611-26-SERIES.
  7. "DIGITAL AND ANALOG LOGIC SYMBOLS ARE USED ON LOGIC DIAGRAMS TO FUNCTIONALLY DESCRIBE THE PROCESS CONTROL. REFER TO THE ASSOCIATED WIRING SCHEMATIC FOR THE ELECTRICAL COMPONENTS USED TO IMPLEMENT THE CONTROL SCHEME".
  8. INPUT TO MICROBIOLOGICAL INDUCED CORROSION (MIC) REMOVAL SYSTEM SUPPLIED ON CONTRACT 51MAA-75554A, DRAWING 496C50001.
  9. THE UNIT 2 SIGNAL IS BYPASSED TO PREVENT THE UNIT 2 HIGH PRESSURE FIRE PROTECTION PUMPS 2A-A, 2B-B FROM OPERATING UNDER UNIT 2 ST SIGNAL.
  10. (U) & (V) DENOTES UNIT 1 & UNIT 2 INTERFACE POINTS.
  11. VALVES REFERENCING THIS NOTE ARE ADMINISTRATIVELY LOCKED IN THE OPEN POSITION (WITH THE BREAKER CLOSED AND THE THERMAL OVERLOADS REMOVED) FOR APPENDIX R. THEY MUST BE CLOSED IN PREPARATION FOR FLOOD MODE.
  12. O-FCV-26-003-A AND O-FCV-26-003-B ARE ADMINISTRATIVELY LOCKED IN THE CLOSED POSITION WITH THE BREAKER CLOSED AND THE THERMAL OVERLOADS REMOVED.
- REFERENCE DRAWINGS:**
- 1-47W611-26-1 LOGIC DIAGRAM INDEX
  - 1-47W611-26-2 THROUGH -10 CONTROL DIAGRAMS
  - 1-47W611-26-11 THROUGH -13 FLOW DIAGRAMS
  - 1-47W611-26-14 THROUGH -15 SCHEMATIC DIAGRAMS
  - 1-47W611-26-16 THROUGH -18 SCHEMATIC DIAGRAMS
  - 496A00-41, -43, -143, -158 SWITCH DEVELOPMENTS
  - 1-47W611-26-19 SCHEMATIC DIAGRAMS

**WATTS BAR  
FIRE PROTECTION  
REPORT**

**POWERHOUSE  
ELECTRICAL  
LOGIC DIAGRAM  
HIGH PRESSURE FIRE PROTECTION  
FIRE PROTECTION REPORT  
TVA DWG NO. 1-47W611-26-1 R20  
FIGURE II-23**

CAD MAINTAINED DRAWING



- NOTES:
1. FOR GENERAL NOTES, SYMBOLS AND REFERENCE DRAWINGS SEE 1-478611-26-1.
  2. THE AUTOMATIC SPRAY SYSTEMS IN THE SERVICE BUILDING HAVE LOCAL PUSHBUTTONS AND ADDITIONAL MANUAL PUSHBUTTONS ON THE SERVICE BUILDING LOADING DOCK.
  3. THE SOOKY MAIN TRANSFORMER BANK SPARE HAS TWO RESET SWITCHES, ONE ON 1-478611-26-1 AND ONE ON 2-478611-26-1.
  4. DIESEL FIRE PUMP CONTROLLER IS NORMALLY CONFIGURED FOR MANUAL SHUTDOWN, WHICH DISABLES THE AUTO STOP LOGIC. CONTROLLER CAN BE CONFIGURED TO SHUTDOWN AUTOMATICALLY AFTER A MINIMUM RUN TIME OF 5 MINUTES OR 30 MINUTES.

COMPANION DRAWING:  
1-478611-26-1

# WATTS BAR FIRE PROTECTION REPORT

POWERHOUSE  
ELECTRICAL  
LOGIC DIAGRAM  
HIGH PRESSURE FIRE PROTECTION  
FIRE PROTECTION REPORT  
TVA DWG NO. 1-47W611-26-2 R15  
FIGURE II-24



### **4.10.1 6.9KV Shutdown Power System**

Each of the four 6.9kV shutdown boards is normally fed from 161kV/6.9kV common station service transformers (CSSTs) that receive power from offsite sources. In addition, upon loss of the normal CSST, the 6.9kV boards will transfer the power source to another CSST.

Each of four 6.9kV shutdown boards can also be fed from the corresponding 6.9kV diesel generator. Loss of offsite power to the 6.9kV boards is sensed by undervoltage relays. Upon sensing an undervoltage, the master relay(s) automatically start the emergency generators, trip the normal feed switchgear breakers and trip all motor feeder breakers on the boards. The generators can also be manually started locally, from the MCR, or from the ACR. For shutdown scenarios that do not require MCR abandonment, a switchgear breaker on each board is automatically closed when its diesel generator is at rated speed and rated voltage and re-energizes the bus. The essential loads are sequentially connected to the bus. For shutdown scenarios from the ACR, breaker closure and diesel generator loading is done manually. The diesel generators will then supply all equipment which must operate under emergency conditions for the respective safeguard train.

### **4.10.2 480V AC Shutdown Power System**

The 480V power system distributes power for low voltage station service demands. The normal source of power is the 6.9kV shutdown boards via the 6.9kV/480V transformers.

The 480V power system consists of eight boards, two per unit per train. Each 480V board is fed from the associated unit/train 6.9kV board through the normal or spare 6.9kV/480V transformers. There are a total of eight normal and four spare transformers, with each spare transformer able to feed either of the two boards of the same train/unit. The 480V shutdown boards feed 480V loads and various MCCs. The MCCs in turn feed various motor operated valves and other loads required for safe shutdown. Each MCC has a normal and alternate power source that can be utilized when needed for equipment maintenance.

### **4.10.3 120V AC Vital Instrument Power System**

The 120V AC Vital Instrument Power System consists of four separate vital boards per unit. Each 120V AC Vital Bus is supplied by an independent inverter. Each station battery supplies two inverters (one per unit) of the same channels. Each inverter is normally supplied by the 480V AC power system of the associated train (A for D or F/B for E or G) and can be supplied from the opposite trains via a manual transfer switch. In addition, the uninterrupted supply to each inverter is its respective 125vdc battery board via a static transfer switch scheme.

The output of each inverter is connected to its 120V AC vital instrument power boards through a normally closed circuit breaker. The vital instrument power boards supply all of the required normal safe shutdown instrumentation per channel.

Note: For operation of Unit 1 only, the Unit 1 and Unit 2 vital instrument power boards for each channel may be interconnected and supplied from a single UPS or maintenance source. In this configuration, the only loads supplied from the boards would be those required for operation of Unit 1.

# PART III - SAFE SHUTDOWN CAPABILITIES

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**TABLE 3-2**  
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**SAFE SHUTDOWN EQUIPMENT LIST**

<u>EQUIPMENT ID</u>	<u>DESCRIPTION</u>
1-MCC-214-A1	C & A BLDG VENT BD 1A1-A
1-MCC-214-B1	C & A BLDG VENT BD 1B1-B
2-MCC-214-A1	C & A BLDG VENT BD 2A1-A
2-MCC-214-B1	C & A BLDG VENT BD 2B1-B
1-MCC-215-A1	DIESEL AUX BD 1A1-A
1-MCC-215-A2	DIESEL AUX BD 1A2-A
1-MCC-215-B1	DIESEL AUX BD 1B1-B
1-MCC-215-B2	DIESEL AUX BD 1B2-B
2-MCC-215-A1	DIESEL AUX BD 2A1-A
2-MCC-215-A2	DIESEL AUX BD 2A2-A
2-MCC-215-B1	DIESEL AUX BD 2B1-B
2-MCC-215-B2	DIESEL AUX BD 2B2-B
1-BD-235-1	120V AC VITAL POWER BOARD 1-I
1-BD-235-2	120V AC VITAL POWER BOARD 1-II
1-BD-235-3	120V AC VITAL POWER BOARD 1-III
1-BD-235-4	120V AC VITAL POWER BOARD 1-IV
1-INV-235-1	120VAC VITAL INVERTER 1-I
1-INV-235-2	120VAC VITAL INVERTER 1-II
1-INV-235-3	120VAC VITAL INVERTER 1-III
1-INV-235-4	120VAC VITAL INVERTER 1-IV
2-BD-235-1	120V AC VITAL POWER BOARD 2-I
2-BD-235-2	120V AC VITAL POWER BOARD 2-II
2-BD-235-3	120V AC VITAL POWER BOARD 2-III
2-BD-235-4	120V AC VITAL POWER BOARD 2-IV
0-BAT-236-5	BATTERY V
0-BAT-236-1	BATTERY I
0-BAT-236-2	BATTERY II
0-BAT-236-3	BATTERY III
0-BAT-236-4	BATTERY IV
0-BD-236-1	125V VITAL BATTERY BOARD I
0-BD-236-2	125V VITAL BATTERY BOARD II
0-BD-236-3	125V VITAL BATTERY BOARD III
0-BD-236-4	125V VITAL BATTERY BOARD IV
0-CHGR-236-1	BATTERY CHARGER 1-D
0-CHGR-236-2	BATTERY CHARGER 2-E
0-CHGR-236-3	BATTERY CHARGER 3-F
0-CHGR-236-4	BATTERY CHARGER 4-G
0-CHGR-236-6	BATTERY CHARGER 6-S FOR 1-D AND 2-E BATTERIES
0-CHGR-236-7	BATTERY CHARGER 7-S FOR 3-F AND 4-G BATTERIES
0-XSW-236-1	480VAC VITAL TRANSFER SWITCH I
0-XSW-236-2	480VAC VITAL TRANSFER SWITCH II
0-XSW-236-3	480VAC VITAL TRANSFER SWITCH III
0-XSW-236-4	480VAC VITAL TRANSFER SWITCH IV
0-XSW-236-6AC	480VAC VITAL SPARE CHARGER TRANSFER SWITCH
0-XSW-236-6DC	125V DC VITAL SPARE CHARGER TRANSFER SWITCH
0-XSW-236-7AC	SPARE 480VAC VITAL TRANSFER SWITCH
0-XSW-236-7DC	SPARE 125V DC VITAL TRANSFER SWITCH
0-PNL-236-1-S	480VAC VITAL DISCONNECT PANEL I
0-PNL-236-2-S	480VAC VITAL DISCONNECT PANEL II
0-PNL-236-3-S	480VAC VITAL DISCONNECT PANEL III
0-PNL-236-4-S	480VAC VITAL DISCONNECT PANEL IV

## PART III - SAFE SHUTDOWN CAPABILITIES

TABLE 3-3

## ANALYSIS VOLUME BY FIRE AREA LIST

<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV001	674.0-A1	Waste Holdup Tank Room
	674.0-A2	Waste Evaporator Feed Pump Room
	676.0-A1	Corridor
	676.0-A2	Holdup Tank Room A
	676.0-A3	Holdup Tank Room B
	676.0-A4	Floor Drain Collection Pump and Filter Room
	676.0-A4a	Floor Drain Collection Tank Room
	676.0-A5	Gas Stripper Feed Pump Room
	676.0-A6	Spare
	676.0-A7	Spare
	676.0-A16	Pipe Gallery
	692.0-A1C	Corridor
	692.0-A8	Pipe Gallery and Chase
	692.0-A31	Spare
	713.0-A28	Pipe Chase
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-002	692.0-A1A1	Corridor, Column Lines Q-U/A1-A4
	692.0-A1A2	Corridor, Column Lines S-T/A4-A5
	692.0-A2	Valve Gallery
	692.0-A3	Gas Decay Tank Room
	692.0-A4	Chemical Drain Tank Room
	692.0-A5	Gas Decay Tank Room
	676.0-A2	Holdup Tank Room A
	676.0-A3	Holdup Tank Room B
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-003	692.0-A1A2	Corridor, Column Lines S-T/A4-A5
	692.0-A1A3	Corridor, Column Lines S-T/A5-A6
	692.0-A1AN	Corridor, Column Lines S-U/A6-A8
	676.0-A2	Holdup Tank Room A
	676.0-A3	Holdup Tank Room B
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-004A AV-004B (Note 1)	692.0-A1AN	Corridor, Column Lines S-U/A6-A8
	692.0-A1BN	Corridor, Column Lines S-U/A8-A10
	676.0-A2	Holdup Tank Room A
	676.0-A3	Holdup Tank Room B
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-004AC AV-004BC (Note 2)	692.0-A1AN	Corridor, Column Lines S-U/A6-A8
	692.0-A1BN	Corridor, Column Lines S-U/A8-A10
	692.0-A1C	Corridor

## PART III - SAFE SHUTDOWN CAPABILITIES

TABLE 3-3

## ANALYSIS VOLUME BY FIRE AREA LIST

<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-005	692.0-A1B	Corridor, Col Lines S-T/A10-A13, S-U/A13-A14, Q-T/A14-A15
	692.0-A1BN	Corridor, Column Lines S-U/A8-A10
	692.0-A27	Concentrate Filter Room
	692.0-A29	Boric Acid Evaporator Package Room B
	692.0-A30	Boric Acid Evaporator Package Room A
	692.0-A31	Spare
	676.0-A2	Holdup Tank Room A
	676.0-A3	Holdup Tank Room B
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-006	692.0-A1C	Corridor, Column Lines U-RxCL/A5-A11
	692.0-A17	M & TE Hot Tool Room
	692.0-A18	Hot Tool Room
	713.0-A1C	Corridor, Column Lines U-W/A7-A9
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-007	676.0-A8	Containment Spray Pump 1B-B
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-008	676.0-A9	Containment Spray Pump 1A-A
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-009	692.0-A9	Charging Pump 1A-A
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-010	692.0-A12	Safety Injection Pump 1B-B
<u>FIRE AREA 1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-011	692.0-A13	Safety Injection Pump 1A-A
<u>FIRE AREA 1-2</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-012	692.0-A19	Safety Injection Pump 2A-A

## PART III - SAFE SHUTDOWN CAPABILITIES

TABLE 3-3

## ANALYSIS VOLUME BY FIRE AREA LIST

<u>FIRE AREA 8</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-027	713.0-A2	Air Lock
	713.0-A3	Titration Room
	713.0-A4	Radio Chemical Lab
	713.0-A5	Counting Room
	713.0-A30	Air Lock
<u>FIRE AREA 8</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-028	713.0-A11	Heat Exchanger IB
<u>FIRE AREA 8</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-029	713.0-A12	Heat Exchanger IA
<u>FIRE AREA 9</u>		<u>DESCRIPTION</u>
AV-030	713.0-A6	Pipe Gallery
	713.0-A8	Reactor Building Access Room
<u>FIRE AREA 9-1</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-031	713.0-A7	Volume Control Tank (VCT) room
<u>FIRE AREA 10</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-032	Stair No. 4	Stairwell
	692.0-A14	Cask Decontamination Collection Tank Room
	692.0-A15	Spent Resin Tank Room
	692.0-A16	Valve Gallery
	728.0-A7	Cask Decontamination Room
	(no room #)	New Fuel Storage Area
	729.0-A5	Cask Unloading Area
	729.0-A6	Nitrogen Storage Area
	729.0-A8	Unit 1 Post Accident Sampling Room
	729.0-A9	Unit 2 Post Accident Sampling Room
	757.0-A13	Refueling Room
	772.0-A9	HEPA Filter Plenum Room
	776.0-A1	Elevator Machine Room
	786.0-A1	Fan Room
	814.715-ACS	Roof Access Room

# PART III - SAFE SHUTDOWN CAPABILITIES

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<u>FIRE AREA 57</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-085	DGB-OS	Additional Diesel Generator Building 742.0-1, Diesel Generator Unit C-S 742.0-2, Fuel Oil Transfer Room 742.0-3, Pipe Gallery 742.0-4, 6.9-KV Switchgear Room 742.0-5, Corridor 742.0-6, Closet 742.0-760.5, Stairwell D3 760.5-1, Air Intake Room 760.5-2, 480-V Auxiliary Board Room 760.5-3, Air Exhaust Room 760.5-4, Transformer Room 760.5-5, Fire Protection Room 760.5-6, Janitor's Closet 760.5-7, Corridor 760.5-8, Closet

<u>FIRE AREA 58</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-086	IPS-A IPS-A IPS-A	El. 741 ERCW Pump Room A El. 741 Screen Wash and HPFP A Pumps Room El. 722 ERCW Strainer Room A

<u>FIRE AREA 59</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-087	IPS-B IPS-B IPS-B	El. 741 ERCW Pump Room B El. 741 HPFP B Pump Room El. 722 ERCW Strainer Room B

<u>FIRE AREA 60</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-088	IPS-CA IPS-CC-A	El. 712.0 Board Room, 20ft west of 480V Bd/Transformer El. 712.0 Board Room, Mid to 20ft west of 480V Bd/Transformer

<u>FIRE AREA 60</u>	<u>ROOM NO.</u>	<u>DESCRIPTION</u>
AV-089	IPS-CC-A IPS-CC-B	El. 712.0 Board Room, Mid to 20ft west of 480V Bd/Transformer El. 712.0 Board Room, Mid to 20ft east of 480V Bd/Transformer

## PART VI - FIRE HAZARDS ANALYSIS

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674.0-A1	Waste Holdup Tank Room
674.0-A2	Waste Evaporator Feed Pump Room
676.0-A1	Corridor
676.0-A2	Holdup Tank Room A
676.0-A3	Holdup Tank Room B
676.0-A4	Floor Drain Collection Pump and Filter Room
676.0-A4a	Floor Drain Collection Tank Room
676.0-A5	Gas Stripper Feed Pump Room
676.0-A6	Spare
676.0-A7	Spare
676.0-A8	Containment Spray Pump 1B-B
676.0-A9	Containment Spray Pump 1A-A
676.0-A16	Pipe Gallery
692.0-A1	Corridor (Subdivided into Analysis Volumes 692.0-A1A1, A1A2, A1A3, A1AN, A1BN, A1B, AND A1C)
692.0-A2	Valve Gallery
692.0-A3	Gas Decay Tank Room
692.0-A4	Chemical Drain Tank Room
692.0-A5	Gas Decay Tank Room
692.0-A8	Pipe Gallery and Chase
692.0-A9	Charging Pump 1 A-A
692.0-A12	Safety Injection Pump 1B-B
692.0-A13	Safety Injection Pump 1A-A
692.0-A17	M & TE Hot Tool Room
692.0-A18	Hot Tool Room
692.0-A27	Concentrate Filter Room
692.0-A29	Boric Acid Evaporator Package Room B
692.0-A30	Boric Acid Evaporator Package Room A
692.0-A31	Spare
713.0-A28	Pipe Chase

3.2	FIRE AREA 1-2 .....	VI-69 THRU 72
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<u>Room No.</u>	<u>Description</u>
696.0-A19	Safety Injection Pump Room 2A-A

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<u>Room No.</u>	<u>Description</u>
676.0-A10	RHR Pump Room 1B-B

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<u>Room No.</u>	<u>Description</u>																									
676.0-A13	RHR Pump Room 2B-B																									
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<u>Room No.</u>	<u>Description</u>																									
676.0-A11	RHR Pump Room1A-A																									
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<u>Room No.</u>	<u>Description</u>																									
676.0-A12	RHR Pump Room 2A-A																									
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<u>Room No.</u>	<u>Description</u>																									
692.0-A6	Auxiliary Feedwater Pump Room 1A-S																									
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692.0-A7	Pipe Gallery																									
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<u>Room No.</u>	<u>Description</u>																									
692.0-A10	Charging Pump Room1B-B																									
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<u>Room No.</u>	<u>Description</u>																									
692.0-A11	Charging Pump Room 1C																									
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<u>Room No.</u>	<u>Description</u>																									
713.0-A1	Auxiliary Building (Subdivided into Analysis Volumes 713.0-A1A1, A1A2, A1A3, A1A4, A1AN, A1BN, A1B, and A1C)																									
713.0-A2	Air Lock																									
713.0-A3	Titration Room																									
713.0-A4	Radio Chemical Lab																									
713.0-A5	Counting Room																									
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713.0-A11	Heat Exchanger 1B																									
713.0-A12	Heat Exchanger 1A																									
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	713.0-A30      Air Lock	
	713.0-A31      Waste Gas Analyzer Room	
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	713.0-A6      Pipe Gallery	
	713.0-A8      Reactor Building Access Room	
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	713.0-A7      Volume Control Tank (VCT) Room	
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	692.0-A14      Cask Decontamination Collection Tank Room	
	692.0-A15      Spent Resin Tank Room	
	692.0-A16      Valve Gallery	
	728.0-A7      Cask Decontamination Room	
	729.0-A5      Cask Unloading Area	
	729.0-A6      Nitrogen Storage Area	
	729.0-A8      Unit 1 Post Accident Sampling Room	
	729.0-A9      Unit 2 Post Accident Sampling Room	
	757.0-A13      Refueling Room	
	772.0-A9      HEPF Filter Plenum Room	
	776.0-A1      Elevator Machine Room	
	786.0-A1      Fan Room	
	814.75-ACS      Roof Access Room	
	Stair No. 4	
	New Fuel Storage Area	
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<u>Room No.</u>	<u>Description</u>															
729.0-A1	Main Steam Valve Room (Unit 1 South)															
737.0-A6	Air Lock															
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<u>Room No.</u>	<u>Description</u>															
729.0-A2	Main Steam Valve Room (Unit 1 North)															
729.0-A16	Shield Building Vent Radiation Monitoring Room															
Additional Equip. Building (AEB) - (729.0-A14, 737.0-A13, 763.5-A1, 775.25-A1, 786.5-A1)																
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<u>Room No.</u>	<u>Description</u>															
737.0-A1	Auxiliary Building (Subdivided into Analysis Volumes 737.0-A1A, A1AN, A1BN, A1B, and A1C)															
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<u>Room No.</u>	<u>Description</u>															
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<u>Room No.</u>	<u>Description</u>															
737.0-A5	Ventilation and Purge Air Room															
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<u>Room No.</u>	<u>Description</u>															
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<u>Room No.</u>	<u>Description</u>																									
755.0-C12	Main Control Room																									
755.0-C13	Relay Room																									
755.0-C14	Technical Support Center																									
755.0-C15	Corridor																									
755.0-C16	Conference Room																									
755.0_C17	Telephone Room																									
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<u>Room No.</u>	<u>Description</u>																									
742.0-4	Diesel Generator Unit 1A-A																									
760.0-5-3	Unit 1A-A Air Exhaust Room																									
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<u>Room No.</u>	<u>Description</u>																									
742.0-5	Diesel Generator Unit 2A-A																									
760.5-6	Unit 2A-A Air Exhaust Room																									
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<u>Room No.</u>	<u>Description</u>																									
742.0-6	Diesel Generator Unit 1B -B																									
760.5-9	Unit 1B-B Air Exhaust Room																									
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<u>Room No.</u>	<u>Description</u>																									
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<u>Room No.</u>	<u>Description</u>									
IPS EL. 722 West	ERCW Strainer Room A (EL 722)									
IPS EL. 741 West	ERCW Pump Room A (EL 741)									
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<u>Room No.</u>	<u>Description</u>									
IPS EL 722 East	ERCW Strainer Room B (EL 722)									
IPS EL 741 East	ERCW Pump Room B (EL 741)									
IPS EL 741 East	HPFP B Pumps Room (EL 741)									
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<u>Room No.</u>	<u>Description</u>									
IPS EL 711	Board Room (Subdivided into Analysis Volumes IPS-CA, IPS-CC-A, IPS-CB, IPS-CC-B)									
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<u>Room No.</u>	<u>Description</u>									
	Unit 1 Reactor Building -- Annulus (Subdivided into Analysis Volumes R0, R1, R1R, RA1, RA2, RA3, RA4, RF1, RF2)									
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### 3.0 FIRE AREA HAZARDS ANALYSIS

#### 3.1 FIRE AREA 1

Fire Area 1 consists of the following rooms on the lower four elevations of the Auxiliary Building as depicted on Figures II-27, II-28, II-29 and II-30.

<u>Room No.</u>	<u>Description</u>
674.0-A1	Waste Holdup Tank Room
674.0-A2	Waste Evaporator Feed Pump Room
676.0-A1	Corridor
676.0-A4	Floor Drain Collection Pump and Filter Room
676.0-A4a	Floor Drain Collection Tank Room
676.0-A5	Gas Stripper Feed Pump Room
676.0-A6	Spare
676.0-A7	Spare
676.0-A16	Pipe Gallery
692.0-A8	Pipe Gallery and Chase
713.0-A28	Pipe Chase
692.0-A1	Corridor (Subdivided into 692.0-A1A, -A1B, and -A1C)
692.0-A2	Valve Gallery
692.0-A4	Chemical Drain Tank Room
692.0-A18	Hot Tool Room
692.0-A27	Concentrate Filter Room
692.0-A29	Boric Acid Evaporator Package Room B
692.0-A30	Boric Acid Evaporator Package Room A
676.0-A8	Containment Spray Pump 1B-B
676.0-A9	Containment Spray Pump 1A-A
676.0-A2	Holdup Tank Room A
676.0-A3	Holdup Tank Room B
692.0-A3	Gas Decay Tank Room
692.0-A5	Gas Decay Tank Room
692.0-A9	Charging Pump 1A-A
692.0-A12	Safety Injection Pump 1B-B
692.0-A13	Safety Injection Pump 1A-A
692.0-A17	M & TE Hot Tool Room
692.0-A31	Spare

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### 3.1.3 Rooms 692.0-A1, A2, A4, A18, A27, A29, and A30

#### Description:

692.0-A1 - Corridor (Subdivided into 692.0-A1A, -A1B, and -A1C)

692.0-A2 - Valve Gallery

692.0-A4 - Chemical Drain Tank Room

692.0-A18 - Hot Tool Room

692.0-A27 - Concentrate Filter Room

692.0-A29 - Boric Acid Evaporator Package Room B

692.0-A30 - Boric Acid Evaporator Package Room A

**Fire Loading:** The combustibles consist of various amounts of lube oil associated with several pumps and valves, plastics associated with various electrical panels and boxes, transformer oil associated with two transformers, insulation on cables in the cable trays and anticipated amounts of radwaste trash and laundry. The fire severity loading for room 692.0-A1 is classified as moderate. The other rooms contain insignificant amounts of combustibles.

**Compartmentation:** Room 692.0-A1 has been subdivided into 692.0-A1A (column lines A1-A8/Q-U), 692.0-A1B (A8-A15/Q-U), and 692.0-A1C (remaining area of 692.0-A1 north of column line U), each of which is identified in the tabular listing of regulatory barriers. There are one rectangular heating, ventilation, and air conditioning (HVAC) duct penetration and two round Emergency Gas Treatment System (EGTS) duct penetrations without fire dampers in the 692.0 floor slab, and one round EGTS duct penetration without fire dampers in the ceiling of 692.0. Stairwell No. 3, an equipment hatch, and the elevator shaft are also unprotected openings in the floor slab.

#### Barriers:

Room	Direction	Adjacent Area/Room	FPR Figure Reference	Regulatory Barrier Rating
692.0-A1A	North Wall	Area 4, Room 692.0-A6	II-28	2 hours
		Area 5, Room 692.0-A7	II-28	2 hours
		Area 6, Room 692.0-A10	II-28	2 hours
		Area 7, Room 692.0-A11	II-28	2 hours
		Area 1, Room 692.0-A9	II-28	2 hours
		Area 1, Room 692.0-A12	II-28	2 hours
		Area 10, Elevator Shaft	II-28	2 hours

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### 3.1.11 Room 692.0-A17

**Description:** M & TE Hot Tool Room

**Fire Loading:** There are no significant combustibles in the room. The fire severity is classified as insignificant.

**Compartmentation:** The floor (partial) and ceiling of this room are regulatory fire barriers.

**Barriers:**

Room	Direction	Adjacent Area/Room	FPR Figure Reference	Regulatory Barrier Rating
692.0-A17	Floor (partial)	Area 1, Room 674.0-A1	II-27, II-28	2 hours
		Area 1, Room 676.0-A1	II-27, II-28	2 hours
	Ceiling	Area 8, Room 713.0-A1C	II-28, II-29	2 hours
		Area 8, Room 713.0-A14	II-28, II-29	2 hours
		Area 8, Room 713.0-A31	II-28, II-29	2 hours
		Unit 2, Room 713.0-A15	II-28, II-29	2 hours

**Doors:** None.

**Dampers:** None.

**Detection:** Ionization smoke detectors are provided for this room.

**Suppression:** An automatic pre-action sprinkler system is provided in the room (except in the entrance labyrinth). A standpipe and hose station is provided in the adjacent room (Corridor 692.0-A1).

**Deviations:** None.

**Evaluations:** The lack of total area suppression in the entrance labyrinth is documented in Part VII, Section 3.1.

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**Deviations:** There is an unprotected opening in the floor to a chase down to room 676.0-A4a, and a non-fire rated hatch cover in the ceiling to a monolithic enclosure on elevation 713. The non-fire-rated hatch cover provides a sufficient level of protection due to the insignificant quantities of combustibles on both sides of the hatch. Justification is documented in Part VII, Section 2.6.

**Evaluations:** The lack of total area suppression is documented in Part VII, Section 3.1.

### 3.1.13 Fire Area 1 Safe Shutdown Analysis by Analysis Volume

#### 3.1.13.1 AV-001

674.0-A1	Waste Holdup Tank Room
674.0-A2	Waste Evaporator Feed Pump Room
676.0-A1	Corridor
676.0-A2	Holdup Tank Room A
676.0-A3	Holdup Tank Room B
676.0-A4	Floor Drain Collection Pump and Filter Room
676.0-A4a	Floor Drain Collection Tank Room
676.0-A5	Gas Stripper Feed Pump Room
676.0-A6	Spare
676.0-A7	Spare
676.0-A16	Pipe Gallery
692.0-A1C	Corridor
692.0-A8	Pipe Gallery and Chase
692.0-A31	Spare
713.0-A28	Pipe Chase

A fire in Analysis Volume 1 could potentially affect systems and components necessary to maintain the long term decay heat removal and steam generator inventory control functions. Mitigating features are required to restore systems necessary for safe shutdown. Specifically, safe shutdown is achieved through the use of the A RHR pump, A and B Auxiliary Feedwater and Charging pumps, and associated flow paths. Offsite power is available. The required mitigating features include providing fire wrap to selected cables to preclude damage to the RHR pump power cable in the event of a fire and manual operation of equipment required for safe shutdown and post fire repairs. These features and equipment affected and credited are identified below:

#### **Power Systems Affected:**

NONE

#### **Power Systems Credited:**

6.9KV AC	:	1A (OFFSITE) , 1B (OFFSITE) , 2A (OFFSITE) , 2B (OFFSITE)
480V AC	:	1A , 1B , 2A , 2B
120V AC	:	1D , 1E , 1F , 1G , 2D , 2E , 2F , 2G
125V DC	:	D , E , F , G

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### Main Control Room Operator Actions:

NO ROOM-SPECIFIC ACTION

### Cable Protection:

NONE

#### 3.1.13.9 AV-006

692.0-A1C	Corridor, Column Lines U-RxCL/A5-A11
692.0-A17	M & TE Hot Tool Room
692.0-A18	Hot Tool Room
713.0-A1C	Corridor, Column Lines U-W/A7-A9

A fire in Analysis Volume 6 could potentially affect systems and components necessary to maintain the long term decay heat removal and reactor coolant inventory control functions. Mitigating features are required to restore systems necessary for safe shutdown. Specifically, safe shutdown is achieved through the use of the A RHR pump, A and B Auxiliary Feedwater and Charging pumps, and associated flow paths. Offsite power is available. The required mitigating features include manual operation of equipment required for safe shutdown and repair procedures. These features and equipment affected and credited are identified below:

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### Local Manual Operator Actions and Repairs:

COMPONENT	FUNCTION PERFORMED	CONTROL OPERATED	WHEN REQUIRED	CONTROL LOCATION
1-FCV-62-1228-A	CLOSE	1-HS-62-1228-A	70	757-A4
1-LCV-62-132-A	CLOSE	HANDWHEEL	70	713-A7

### Main Control Room Operator Actions:

COMPONENT	FUNCTION PERFORMED	CONTROL OPERATED	WHEN REQUIRED
1-LCV-62-135-A	OPEN	1-HS-62-135A-A	0

### Cable Protection:

NONE

### 3.14 FIRE AREA 10

Fire Area 10 consists of several rooms in the Auxiliary Building on elevations 692.0, 729.0, 757.0, and 772.0, and connecting spaces.

#### 3.14.1 Auxiliary Building Elevation 729.0

##### Description:

728.0-A7 - Cask Decontamination Room  
No Room Number - New Fuel Storage Area  
729.0-A6 - Nitrogen Storage Area  
729.0-A8 - Unit 1 Post Accident Sampling Room  
729.0-A9 - Unit 2 Post Accident Sampling Room  
Stair No. 4

**Fire Loading:** The combustibles consist of lube oil in motors, charcoal in the filter units, and plastic associated with electrical panels and boxes and lights. The Fuel Transfer Valve Rooms contain small compressed gas cylinders of hydrogen at concentrations of less than 10 percent by volume. The fire severity is classified as insignificant.

**Compartmentation:** The rooms are of reinforced concrete construction. The barriers of the rooms in this fire area have been evaluated in accordance with the guidelines of Appendix A, Section D.1.j. The barrier ratings are adequate for the level of fire hazard (i.e., insignificant fire severity) in the area/rooms.



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**Suppression:** Automatic sprinklers are provided in 692.0-A14 only. A standpipe and hose station is provided in room 692.0-A14.

**Deviations:** None.

**Evaluations:** None.

### 3.14.7 Fire Area 10 Safe Shutdown Analysis by Analysis Volume

#### 3.14.7.1 AV-032

Stair No. 4	Stairwell
692.0-A14	Cask Decontamination Collection Tank Room
692.0-A15	Spent Resin Tank Room
692.0-A16	Valve Gallery
728.0-A7	Cask Decontamination Room
(no rm no.)	New Fuel Storage Area
729.0-A5	Cask Unloading Area
729.0-A6	Nitrogen Storage Area
729.0-A8	Unit 1 Post Accident Sampling Room
729.0-A9	Unit 2 Post Accident Sampling Room
757.0-A13	Refueling Room
772.0-A9	HEPA Filter Plenum Room
776.0-A1	Elevator Machine Room
786.0-A1	Fan Room
814.75-ACS	Roof Access Room

A fire in Analysis Volume 32 could potentially affect systems and components necessary to maintain the reactor pressure control functions. Mitigating features are required to restore systems necessary for safe shutdown. Specifically, safe shutdown is achieved through the use of the A and B RHR, Charging and Auxiliary Feedwater pumps, and associated flow paths. Offsite power is available. The required mitigating features include manual operation of equipment required for safe shutdown. These features and equipment affected and credited are identified below:

#### Power Systems Affected:

480V AC	:	2A
---------	---	----

#### Power Systems Credited:

6.9KV AC	:	1A (OFFSITE), 1B (OFFSITE), 2A (OFFSITE), 2B (OFFSITE)
480V AC	:	1A, 1B, 2B
120V AC	:	1D, 1E, 1F, 1G, 2D, 2E, 2F, 2G
125V DC	:	D, E, F, G

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**Dampers:** None.

**Detection:** No detectors are provided in room 729.0-A1. No detection is provided in room 737.0-A6.

**Suppression:** Standpipes and hose stations are provided from adjacent rooms.

**Deviations:** None.

**Evaluations:** None.

### 3.16.2 Fire Area 12 Safe Shutdown Analysis by Analysis Volume

#### 3.16.2.1 AV-034

729.0-A1      Main Steam Valve Room (Unit 1 South)  
737.0-A6      Air Lock

A fire in Analysis Volume 34 could potentially affect systems and components necessary to maintain the secondary side isolation, reactor pressure control functions. Mitigating features are required to restore systems necessary for safe shutdown. Specifically, safe shutdown is achieved through the use of the A RHR pump, the A and B Auxiliary Feedwater and Charging pumps, and associated flow paths. Offsite power is available. The required mitigating features include manual operation of equipment required for safe shutdown. These features and equipment affected and credited are identified below:

#### Power Systems Affected:

NONE

#### Power Systems Credited:

6.9KV AC	:	1A (OFFSITE), 1B (OFFSITE), 2A (OFFSITE), 2B (OFFSITE)
480V AC	:	1A, 1B, 2A, 2B
120V AC	:	1D, 1E, 1F, 1G, 2D, 2E, 2F, 2G
125V DC	:	D, E, F, G

#### Major Equipment Affected:

COMPONENT	DESCRIPTION	SHUTDOWN PATH
1-MTR-30-191-B	CCS/AFW PUMP ROOM COOLER 1B	KEY 37O

#### Major Equipment Credited:

COMPONENT	DESCRIPTION	SHUTDOWN PATH
0-MTR-31-11-B	MAIN CONTROL ROOM AIR HANDLER B-B	KEY 37A PATH 2
0-MTR-31-12-A	MAIN CONTROL ROOM AIR HANDLER A-A	KEY 37A PATH 1
0-MTR-67-28-A	EMERGENCY RAW COOLING WATER PUMP A-A	KEY 1 PATH 1

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**Dampers:** None.

**Detection:** No detectors are provided in the room.

**Suppression:** A standpipe and hose station is provided from the Additional Equipment Building (729.0-A14).

**Deviations:** None.

**Evaluations:** None.

### 3.17.2 Room 729.0-A16

**Description:** Shield Building Vent Radiation Monitoring Room

**Fire Loading:** The combustibles consist of lube oil in pumps and plastic associated with electrical panels and boxes and lights. The fire severity is classified as insignificant.

**Compartmentation:** The room is of reinforced concrete construction.

#### **Barriers:**

Room	Direction	Adjacent Area/Room	FPR Figure Reference	Regulatory Barrier Rating
729.0-A16	South Wall	Area 61, Reactor Building	II-38	3 hours

**Doors:** None.

**Dampers:** None.

**Detection:** None.

**Suppression:** A standpipe and hose station is provided from the adjacent room (729.0-A14).

**Deviations:** None.

**Evaluations:** None.

### 3.17.3 AEB

**Description:** Additional Equipment Building (AEB) (729.0-A14, 737.0-A13, 763.5-A1, 775.25-A1, 786.5-A1)

**Fire Loading:** The combustibles consist of lube oil and hydraulic fluid in valves, pumps and motors, plastics associated with electrical panels and boxes and lights and glycol in the chiller packages and barrels. The fire severity is classified as low.

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### 3.62 FIRE AREA 57

#### 3.62.1 Additional Diesel Generator Building

**Description:**

- 742.0-1 - Diesel Generator Unit C-S
- 742.0-2 - Fuel Oil Transfer Room
- 742.0-3 - Pipe Gallery
- 742.0-4 - 6.9KV Switchgear Room
- 742.0-5 - Corridor
- 742.0-6 - Closet
- 760.5-1 - Air Intake Room
- 760.5-2 - 480-V Auxiliary Board Room
- 760.5-3 - Air Exhaust Room
- 760.5-4 - Transformer Room
- 760.5-5 - Fire Protection Room
- 760.5-6 - Janitor's Closet
- 760.5-7 - Corridor
- 760.5-8 - Closet
- 742.0-760.5 -- Stairwell D3

**Fire Loading:** The combustibles in room 742.0-1 consist of the fuel oil for the diesel generator, plastics associated with electrical panels and insulation on cables in trays. The fire severity is classified as moderately severe. The combustibles in room 742.0-3 consist of plastics associated with electrical panels and insulation on cables in trays. The fire severity is classified as low. The combustibles in room 742.0-4 consist of plastics associated with the switchgear and electrical panels and insulations on cables in trays. The fire severity is classified as low. The combustibles in room 760.5-1 consist of oil in the intake filters and hoist and plastics associated with lighting units and junction boxes. The fire severity is classified as low. The combustibles in room 760.5-2 consist of plastic associated with electrical boards and panels and insulations on cables in trays. The fire severity is classified as moderate. The combustibles in room 760.5-3 consists of plastic associated with electrical panels and insulation on cables in trays. The fire severity is classified as low. The combustibles in room 760.5-4 consist of resins in the transformers, plastic associated with the electrical boards and panels, and insulation on the cables in trays. The fire severity is classified as moderate. The fire severity classification in rooms 742.0-2, 5 and 6 and 760.5-5, 6, 7 and 8 and Stairwell D3 is insignificant.

**Compartmentation:** The Additional Diesel Generator Building is of reinforced concrete construction.

**Barriers:** None.

**Doors:** None.

**Dampers:** None.

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**Detection:** Heat detectors are provided in rooms 742.0-1, 2, and 3 and 760.5-1 and 3. Ionization smoke detectors are provided in rooms 742.0-4 and 5 and 760.5-2, 4, 5, 6 and 7.

**Suppression:** An automatic foam pre-action sprinkler system is provided in rooms 742.0-1, 2, 3, and 4 and 760.5-4. An automatic pre-action sprinkler system (water) is provided for room 760.5-2. Standpipe and hose stations are provided in rooms 742.0-1 and 760.5-1.

**Deviations:** None.

**Evaluations:** None.

### 3.62.2 Fire Area 57 Safe Shutdown Analysis by Analysis Volume

#### 3.62.2.1 AV-085

DGB-OS	Additional Diesel Generator Building
	742.0-1, Diesel Generator Unit C-S
	742.0-2, Fuel Oil Transfer Room
	742.0-3, Pipe Gallery
	742.0-4, 6.9-KV Switchgear Room
	742.0-5, Corridor
	742.0-6, Closet
	742.0-760.5 - Stairwell D3
	760.5-1, Air Intake Room
	760.5-2, 480-V Auxiliary Board Room
	760.5-3, Air Exhaust Room
	760.5-4, Transformer Room
	760.5-5, Fire Protection Room
	760.5-6, Janitor's Closet
	760.5-7, Corridor
	760.5-8, Closet

A fire in Analysis Volume 85 would not impact major equipment required to maintain safe shutdown functions. Shutdown can be achieved by utilizing both train A and B systems and components without mitigating actions. Equipment available to achieve shutdown is identified below:

#### **Power Systems Affected:**

NONE

# PART VIII - CONFORMANCE TO APPENDIX A TO BTP 9.5-1 GUIDELINES

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Appendix A Guidelines	Plant Conformance	Alternatives	Remarks
<p>d. Interior wall and structural components, thermal insulation materials and radiation shielding materials and sound-proofing should be noncombustible. Interior finishes should be noncombustible or listed by a nationally recognized testing laboratory, such as Factory Mutual or Underwriters' Laboratory, Inc., for flame spread, smoke, and fuel contribution of 25 or less in its use configuration (ASTM E-84 Test, "Surface Burning Characteristics of Building Materials").</p>		<p>The facility is designed in accordance with General Design Criterion 3, which requires that noncombustible and fire-resistant materials be used throughout the facility. Noncombustible materials are used to the extent practicable. The fire protection standard and methodology that was in effect at that time for testing carpeting (interior finishes) was ASTM E-84 and NFPA 255. In 1990, the standard and methodology for testing carpeting changed to ASTM E-648 and NFPA 253. In light of the noted standard/methodology change, TVA installed carpeting in the control room that was tested in accordance with NFPA 253 and has a critical radiant flux (CRF) factor of <math>\geq 0.45 \text{ w/cm}^2</math>. The noted CRF of <math>0.45 \text{ w/cm}^2</math> is consistent with our insurer's (Nuclear Mutual Limited) loss prevention standard and is also consistent with previous NRC approvals such as that documented in the Safety Evaluation Report for Texas Utilities' Comanche Peak Steam Electric Station (NUREG-0797, Supplement No. 26, Section 9.5.1.7b). Additionally, our insurer has given us permission to install carpet with a smoke development rating of <math>\leq 450</math> when tested in accordance with ASTM E-662 and NFPA 258. The small anti-static mat installed at Panel 1-M-13 is provided to prevent static discharge to the panel. A non-combustible mat was not commercially available for this installation.</p>	<p>Fuel contribution values of 50 or less are acceptable based on BTP guidelines.</p>