UPDATED
FIRE HAZARDS ANALYSIS

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 1, 2, AND 3

FEBRUARY 1984

REVISION 10
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The site is on the U.S. Marine Corps Base at Camp Pendleton. Although the station is designed to be self-sufficient with respect to fire fighting activities, a mutual fire fighting assistance agreement has been executed with the Camp Pendleton Marine Corps Base. Personnel limitations will not be reduced to less than 5 persons in the fire department due to Mutual Aid Agreement activities.

Communications with the Camp Pendleton Fire Department is provided by redundant and diverse communications systems.

2.4 TRAINING

2.4.1 Fire Department Training

All Fire Department personnel receive training on a daily basis. The training consists of skills, techniques, and strategies in firefighting and emergency medical technician, heavy rescue, auto extrication, hazardous materials, rescue, and fire protection systems. Training also includes the use of new equipment, procedures, methods and hazards.

The fire department coordinates drills that incorporates the expertise of the Camp Pendleton Fire Department, Health Physics, Security, Operations, Maintenance, and other site organizations.

2.4.2 General Employee Training

Employees receive instructions on their proper response to a fire. They are taught when to attempt to extinguish a fire or when to leave the area immediately and call the Fire Department.

2.5 DRILLS

Practice drills are conducted under the control of the Fire Chief. These drills are conducted at a safe pace, with emphasis on effectiveness rather than speed. These drills are conducted periodically in conjunction with those organizations also having responsibility to perform emergency operations.

2.6 QUALITY ASSURANCE

The Quality Assurance Program assures that the requirements for design, procurement, installation, testing, and administrative controls for the Fire Protection Plan are satisfied. The Quality Assurance Program is under the management control of the QA organization. This control consists of (1) formulating, verifying, and updating the Fire Protection QA program that is acceptable to the Manager Station Emergency Preparedness, and (2) verifying the effectiveness of the Fire Protection QA plan through review, surveillance, and audits.

The Quality Assurance Program for the station is covered in the Topical Quality Assurance Manual. Chapter 8-A of the Topical Quality Assurance Manual, "Quality Assurance Program Requirements for the Fire Protection Program, SONGS 1, 2, and 3," describes the Quality Assurance Program provisions which apply to the Fire Protection Program for safety-related areas, and establishes the responsibilities for the implementation of the program.

2.7 NUCLEAR MUTUAL LIMITED

The requirements of the "property loss" insurer, Nuclear Mutual Limited (NML), are an integral part of the station's Fire Protection Program. Frequent routine inspections of the plant are performed by members of this organization. As a minimum, an NML inspector witnesses a station fire brigade drill annually.

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-CO-15-1A

AREA: 1335 sq.ft. **DESCRIPTION:** GENERATOR ROOM #2

COMBUSTIBLES

Oil & Grease	2827 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	17 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	38100.94 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.48 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	semi-automatic water spray for RC pumps
Hose Stations	none, (1)seismic available in 2-CO-15-1C
Portable Extinguishers	none, 10A:80B:C & 10B:C in 2-CO-15-1C
Detectors (type)	heat detectors for reactor coolant pumps

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1C
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N,B		B*,A*,A,B
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	N,B		B*,A*,A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			+
120 V (AC)			+
125 V (DC)			
Electrical Panels			
SUMMARY			+

ASSOCIATED CIRCUITS OF CONCERN:

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FIRE AREA/ZONE 2-CO-15-1A

Location

Containment Building - El. 15'-0" - Generator Room #2 - 1335 square feet - Figs. 8-1, 8-2, 8-3, 8-4

Combustible Material	Quantity
Oil	2827 lbs
Plastic	17 lbs

Fire loading - 38,101 Btu/sq ft
Maximum permissible fire loading - 80,000 Btu/sq ft (Note 1)

Note 1: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 1575 °F and would involve oil normally contained within the two reactor coolant pumps located in the zone.

Transient fire loads in this area are not credible when the plant is at power, and fixed hazards within containment, which pose an exposure threat to equipment, components, or circuits required for safe shutdown (i.e., reactor coolant pumps), are provided with fixed semi-automatic water suppression systems and automatic detection capability.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the zone.

Fire Protection Equipment

The zone contains a semi-automatic water spray system, with fixed temperature rate of rise detection, over the reactor coolant pumps. The heat detectors alarm in the control room. No hose stations or portable extinguishers are located within the zone. However, manual fire fighting equipment is available in adjacent zone 2-CO-15-1C.

Construction

The zone boundaries are heavy concrete with an approximate thickness of 48 inches. An open walkway allows access to the zone from adjacent zone 2-CO-15-1C. There are no fire dampers in the ventilation duct penetrations.

Safe Shutdown Equipment

Equipment Required for Hot Standby

RCS - Train B Cables and Equipment

RCS - Train A Cables

RCS - No Train Equipment

Equipment Required for Cold Shutdown

None

High/Low Pressure Interface Equipment

None

Spurious Operation Equipment

RCS - Train X Cables, Valves and Equipment

Alternative Shutdown Equipment

RCS - Train A and B Cables

Safety Related Equipment Not Required for Safe Shutdown

None

Technical Specification Barriers

For definition of the barriers requiring surveillance per Technical Specification 3.7.9, refer to Figures 8-1, 8-2, 8-3, and 8-4, sheet 3/4.

Consequences of Design Basis Fire

All manual operator actions required to achieve safe shutdown for a fire in this area/zone are performed outside the area/zone unless otherwise stated.

Effects of Fire on Hot Standby Capability

120 V

Due to inadequate breaker coordination, damage to cabling associated with the 120VAC panels may result in loss of power to the panels. Operator action will be taken to strip affected loads and reclose supply breaker.

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-CO-15-1B

AREA: 1399 sq.ft. **DESCRIPTION:** GENERATOR ROOM #1

COMBUSTIBLES

Oil & Grease	2827 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	17 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	36357.94 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.45 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	semi-automatic water spray for RC pumps
Hose Stations	none, (1) seismic available in 2-CO-15-1C
Portable Extinguishers	none, 10A:80B:C, 10B:C in 2-CO-15-1C
Detectors (type)	heat detectors for reactor coolant pumps

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1C
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N,A,B		B*,A*,A,B
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	N,A,B		B*,A*,A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			B
SUMMARY			B

ASSOCIATED CIRCUITS OF CONCERN‡

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FPDS ver. 3.2

FIRE AREA/ZONE: 2-CO-15-1C
AREA: 11903 sq.ft. **DESCRIPTION:** CONTAINMENT AREA QUADRANTS 1,2,3,4

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	24749 lbs.
Class A	0 lbs.
Charcoal	5600 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	31549.46 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.39 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray system for charcoal
Hose Stations	(9) seismic
Portable Extinguishers	(12)10A:80B:C, (12)10B:C
Detectors (type)	partial ionization,charcoal temp. detector

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1D
Doors	(3)B/2-CO-15-167, (3)B/2-CO-15-168

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N		NOTE 1
Reactor Protection System			
Shutdown Cooling		A,B	A,B
Chemical and Volume Ctrl			A,B
Main Feedwater			
Main Steam			NOTE 2
HVAC			A,B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC	N	A,B	NOTE 1
SUMMARY			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			B
Electrical Panels			B
SUMMARY			

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,B*,C,D
NOTE 2 = A,A*,B,C,D

FPDS ver. 3.2 FIRE AREA/ZONE: 2-CO-63-1D

AREA: 14185 sq.ft. DESCRIPTION: OPERATING FLOOR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	29146 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	25170.03 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.31 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(3) seismic
Portable Extinguishers	(4)10A:80B:C, (4)10B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1C
Doors	B/2-CO-15-167, B/2-CO-15-168

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			NOTE 1
Reactor Protection System			
Shutdown Cooling		A,B	A,B
Chemical and Volume Ctrl			A,B
Main Feedwater			
Main Steam			A*,B,C
HVAC	A,B		A,B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			
SUMMARY	A,B	A,B	NOTE 2

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			B
SUMMARY			B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,B,B*,C,D

NOTE 2 = A,A*,B,B*,C,D

FPDS ver. 3.2

FIRE AREA/ZONE: 2-PE-9-2A
DESCRIPTION: PIPING AREA

AREA: 7468 sq.ft.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	50 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	262 lbs.

DESIGN BASIS FIRE

Fire Loading	635.24 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.01 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	(3) 10A:80B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC/containment,2B,73,148G, 3hr/others
Floor, Ceiling, Roof	HC/2C floor grade, others 2hr
Penetrations	D, C, P, SG, ND/2C,148G, QP/73, QP/94,
Fixed Openings	OP/2B, MH/2C, OS/2C, OH/2C, OD/2B
Doors	W/2-TB-8-148G, A/2-AR-9-76, A/2-FH-15-124, A/2-FH-17-122

HOT STANDBY SYSTEMS

- Reactor Coolant
- Reactor Protection System
- Shutdown Cooling
- Chemical and Volume Ctrl
- Main Feedwater
- Main Steam
- HVAC
- Auxiliary Feedwater
- Engineered Safety Feature
- Component Cooling Water
- Saltwater Cooling Water
- Emergency Chilled Water
- Diesel Generator Systems

Equipment	Valves	Cable
		B
		B
		A,B

COLD SHUTDOWN SYSTEMS

- Shutdown Cooling
- CCW (To SDC)
- HVAC
- SUMMARY

Equipment	Valves	Cable
	N	A,B
	N	A,B

ESSENTIAL ELECTRIC SYSTEMS

- 220 KV (AC)
- 4160 V (AC)
- 480 V (AC)
- 120 V (AC)
- 125 V (DC)
- Electrical Panels
- SUMMARY

Equipment	MCC and Switchgear	Cable
		A,B,X
		A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2

FIRE AREA/ZONE: 2-PE-63-3B

AREA: 6415 sq.ft.

DESCRIPTION: ELECT. PEN. AREA/PERSONNEL MON. AREA

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	43902 lbs.
Class A	1040 lbs.
Charcoal	0 lbs.
Plastics	145 lbs.
Miscellaneous	202 lbs.

DESIGN BASIS FIRE

Fire Loading	86002.76 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.08 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(2) seismic
Portable Extinguishers	(5) 10B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC/containment, 2hr/178A, 3hr/others
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D, SG
Fixed Openings	MH/3A
Doors	A/2-AC-70-63, A/2-AR-63-116, A/2-FH-63-134, A/2-FH-17-123 A/2-AR-68-178A

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A,B,C,B*
Reactor Protection System		
Shutdown Cooling		B
Chemical and Volume Ctrl		A,B
Main Feedwater		
Main Steam		B,C
HVAC		B
Auxiliary Feedwater		
Engineered Safety Feature		
Component Cooling Water		B
Saltwater Cooling Water		
Emergency Chilled Water		B
Diesel Generator Systems		

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		
HVAC		
SUMMARY		A,B,C,B*

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		X
4160 V (AC)		B
480 V (AC)		
120 V (AC)		+
125 V (DC)		
Electrical Panels		NOTE 1
SUMMARY		NOTE 1, +

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,B,B*,C,X

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-SE-(-5)-135A

AREA: 7285 sq.ft. **DESCRIPTION:** PIPING RM/HEAT EXCH RM.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	53 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	25 lbs.
Miscellaneous	30 lbs.

DESIGN BASIS FIRE

Fire Loading	210.97 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none @(-5'-3"), wet pipe system @ 8'-0"
Hose Stations	(1) @ (-5'-3"), (1) @ 8'-0"
Portable Extinguishers	(2)10A:80B:C @ (-5'-3"), (2)10A:80B:C @ 8'
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	HC/141, others 3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	P, C, D, NP/141, QC/148G, QP/135B,136
Fixed Openings	MH/135B,135C,135D,2B
Doors	(2)W/2-TB-8-148G,W/2-TB-7-148A,W/2-SE-(-15)-136,W/2-SE-(-5)-135B,135C,135D

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water	N	A,B	A,B,b
Saltwater Cooling Water			A,B
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	N	A,B	A,B,b

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			A,B
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			A,B
SUMMARY			A,B,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-SE-(-15)-136
AREA: 1860 sq.ft. **DESCRIPTION:** STAIRCASE / A/C ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	61 lbs.
Charcoal	0 lbs.
Plastics	5 lbs.
Miscellaneous	8 lbs.

DESIGN BASIS FIRE

Fire Loading	372.15 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers @ el. 8'-0"
Hose Stations	(1) @ 8'-0"
Portable Extinguishers	(2) 10A:80B:C @ el. 8'-0"
Detectors (type)	ionization @ 8'-0"

FIRE RESISTANCE RATING

Walls	HC/2B,138,139,140A,140B, others 3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	P,C,D,NC/140B, QC/139, NP/SEE TEXT, QP/SEE TEXT
Fixed Openings	OP/2B,CH/137A,137B
Doors	W/137A,137B,137C,161B,138,139 W/140A,141,135A, (2)W/2-TB-7-148A

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A,B
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			A,B

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling		A,B	A,a,B
CCW (To SDC)		A,B	A,B
HVAC			a,B
SUMMARY		A,B	A,a,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			A,B,X
SUMMARY			A,B,X,+

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-SE-30-142A
AREA: 6634 sq.ft. **DESCRIPTION:** ELECTRICAL TUNNEL

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	80628 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	148882.56 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.86 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	none, (1) in 2-AC-30-28, (1) in 2-AC-30-27
Portable Extinguishers	(5) 10A:80B:C, (1) 20B:C, (6) 10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	3hr, HC/146, NR/142B
Floor, Ceiling, Roof	2hr
Penetrations	C, P
Fixed Openings	OP/142B, louvers/exterior
Doors	B/2-AC-30-28, A/2-AC-70-63

	Equipment	Valves	Cable
HOT STANDBY SYSTEMS			
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			A,B
Main Steam			A,B,A*
HVAC			
Auxiliary Feedwater			A,a,B,C
Engineered Safety Feature			A,B,C,D
Component Cooling Water			A,a,B
Saltwater Cooling Water			a,B
Emergency Chilled Water			a,B
Diesel Generator Systems			B

	Equipment	Valves	Cable
COLD SHUTDOWN SYSTEMS			
Shutdown Cooling			A,a,B
CCW (To SDC)			A,a,B
HVAC			a,B
SUMMARY			NOTE 1

	Equipment	MCC and Switchgear	Cable
ESSENTIAL ELECTRIC SYSTEMS			
220 KV (AC)			X
4160 V (AC)			A,B
480 V (AC)			B,A*
120 V (AC)			A*,+
125 V (DC)			
Electrical Panels			##,A*
SUMMARY			##,A*,+

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

NOTES
NOTE 1 = A,A*,a,B,C,D

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-FH-17-123
AREA: 5717 sq.ft. **DESCRIPTION:** SPENT FUEL POOL/OPER. FLOOR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	2 lbs.
Class A	600 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	250 lbs.

DESIGN BASIS FIRE

Fire Loading	1692.23 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.02 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(2) @ el. 63'-0"
Portable Extinguishers	(2) 10B:C
Detectors (type)	infrared

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	D, C, P, ND/exterior
Fixed Openings	CH/174A, MH/174A
Doors	A/2-PE-63-3B

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			B,X
SUMMARY			B,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : NO

FPDS ver. 3.2

FIRE AREA/ZONE: 2-TB-7-148A
AREA: 47626 sq.ft. **DESCRIPTION:** TURBINE BLDG.

COMBUSTIBLES

Oil & Grease	12573 lbs.
Cable	142483 lbs.
Class A	0 lbs.
Charcoal	30 lbs.
Plastics	3025 lbs.
Miscellaneous	3250 lbs.

DESIGN BASIS FIRE

Fire Loading	42463.47 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.53 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray systems locally
Hose Stations	(12)
Portable Extinguishers	(1)80B:C,(2)40A:160B:C,(4)10BC,(19)10A80BC
Detectors (type)	ionization,local heat detectors

FIRE RESISTANCE RATING

Walls	(see text)
Floor, Ceiling, Roof	2hr/153, 149, HC/154A, 148E, grade
Penetrations	ND/153
Fixed Openings	OD/148G, MH/148E, MH/153,metal shroud/154A
Doors	(2)A/2-TB-7-149,B/2-TB-30-153,(2)B/2-TB-7-50, (2)X/148C,(3)NR/148H,(4)NR/ext,W/2-SE-(-15)-136, W/2-SE-(-5)-135A

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			A
480 V (AC)	A*		A*
120 V (AC)	A*		A*
125 V (DC)			
Electrical Panels			##,A*
SUMMARY	A*		##,A*

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

NOTES

A,B,C,D,X = ##

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-TB-8-148G
AREA: 1150 sq.ft. **DESCRIPTION:** CORRIDOR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	0.00 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/2B, 14,82,135A, HC/others
Floor, Ceiling, Roof	2hr
Penetrations	QC/135A, ND/2A, QP/82, C
Fixed Openings	OD/148A
Doors	(2) W/2-SE-(-5)-135A, W/2-PE-9-2A, W/2-PE-(-18)-2B

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			B
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			
SUMMARY			A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			A,B,X
SUMMARY			A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AC-9-5

AREA: 6252 sq.ft. **DESCRIPTION:** CABLE SPREADING ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	73289 lbs.
Class A	12 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	143616.14 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.80 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(1) 10B:C, (1) 20B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	ceiling 2hr, HC/floor to 169, grade
Penetrations	D, C, P, ND/169
Fixed Openings	M/169
Doors	A/2-AC-9-16, A/2-AC-9-17, B/3-AC-9-6, (3) B/2-AC-9-14

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,A*
Reactor Protection System			A,C
Shutdown Cooling			A,B
Chemical and Volume Ctrl			A,B
Main Feedwater			A
Main Steam			A,A*,B
HVAC			A,B
Auxiliary Feedwater			A,C
Engineered Safety Feature			
Component Cooling Water			A,B,X
Saltwater Cooling Water			A
Emergency Chilled Water			A
Diesel Generator Systems			A

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			A
HVAC			A,B
SUMMARY			NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			A,B
480 V (AC)			A,A*
120 V (AC)			
125 V (DC)			
Electrical Panels			A,A*,B
SUMMARY			A,A*,B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,C,X

FIRE AREA/ZONE 2-AC-9-5

Location

Auxiliary Control Building - El. 9'-0" - Cable Spreading Room - 6252 square feet - Fig. 8-5

Combustible Material	Quantity
Cable insulation	73,289 lbs
Class A	12 lbs

Fire loading - 143,617 Btu/sq ft (Note 1)
Maximum permissible fire loading - 160,000 Btu/sq ft (Note 2)

Note 1: The quantity of cable insulation called out above is based on 25% fill for all cable trays that are filled with cable up to 25% full by volume. For cable trays that are more than 25% full, the actual percentage fill has been used. This is extremely conservative, since very few trays are filled to greater than 25% and the actual plant average tray fill is significantly lower.

Note 2: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials. Cable tray fill should be limited below 25% such that the maximum permissible fire loading is not exceeded.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 1875 °F and would involve cable insulation.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the area.

Fire Protection Equipment

The area contains an automatic water spray system with fixed temperature rate of rise actuation. Actuation by the heat detectors results in control room annunciation. Manual fire fighting equipment is available within the area. Ionization smoke detectors, located throughout the area, provide early warning alarm in the control room.

Construction

The east wall of the area is reinforced concrete with a 3 hour rating. The area is separated from adjacent stairwell (2-AC-9-15) by 2 hour rated concrete walls. The remainder of the walls are 2 hour rated plaster partitions. Support columns are protected by vermiculite fireproofing. The floor to 2-AG-(-5)-169 is nonrated heavy concrete construction as is the floor to grade. The ceiling is 2 hour rated. The area communicates with adjacent cable riser gallery (2-AC-9-14) through three 1-1/2 hour rated doors. Three hour rated double doors communicate with the corridor (2-AC-9-16) and the relay room (2-AC-9-17). One 1-1/2 hour rated door separates the area from the

Unit 3 cable spreading room (3-AC-9-6). A 28" diameter manhole cover allows access to the emergency chilled water pipe tunnel (2-AC-(-5)-169). The ventilation duct penetration to the emergency chilled water tunnel is not provided with a fire damper. The remainder of the ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Safe Shutdown Equipment

Equipment Required for Hot Standby

NOTE: The following list of cables/equipment includes only those systems credited to achieve safe shutdown for a fire in this alternative shutdown fire area.

Unit 2

4160V - Train A and B Cables

480V - Train A Cables

AFW - Train A and C Cables

CCW - Train A, B and X Cables

CVCS - Train A and B Cables

DG - Train A Cables

ECW - Train A Cables

EP - Train A Cables

HVAC - Train A and B Cables

MFW - Train A Cables

MSS - Train A and B Cables

RCS - Train A Cables

RPS - Train A and C Cables

SDC - Train A and B Cables

SWC - Train A Cables

Unit 3

4160V - Train A and B Cables

EP - Train A Cables

FPDS ver. 3.2

FIRE AREA/ZONE: 3-AC-9-6
AREA: 6129 sq.ft. **DESCRIPTION:** CABLE SPREADING ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	116518 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	232884.00 BTU's/sq.ft.
Fire Loading - Max Permiss	(SEE TEXT.)
Fire Duration	2.91 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(1) 10B:C, (1) 20B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	D, C, P
Fixed Openings	none
Doors	B/2-AC-9-5, A/2-AC-9-17, (3)B/3-AC-9-7, A/2-AC-9-16

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A,A*,B*
Reactor Protection System		A,C
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		A
Main Steam		A,A*,B
HVAC		A,B
Auxiliary Feedwater		A,C
Engineered Safety Feature		
Component Cooling Water		A,B,X
Saltwater Cooling Water		A
Emergency Chilled Water		A
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		A
HVAC		A
SUMMARY		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		A,B
480 V (AC)		A,A*
120 V (AC)		
125 V (DC)		
Electrical Panels		A,A*,B
SUMMARY		A,A*,B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,C,X

FPDS ver. 3.2

FIRE AREA/ZONE: 3-AC-9-7
AREA: 2390 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	51237 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	262617.01 BTU's/sq.ft.
Fire Loading - Max Permiss	(SEE TEXT.)
Fire Duration	3.28 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(2) 10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north 2hr, others 3hr
Floor, Ceiling, Roof	ceiling 2hr, HC/floor to 169, grade
Penetrations	D, C, P, ND/169, QP/21, 32, 33
Fixed Openings	M/169
Doors	(3) B/3-AC-9-6, B/2-AC-9-8

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A,A*,B*
Reactor Protection System		A,C
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		A
Main Steam		A,A*,B
HVAC		a,A,B
Auxiliary Feedwater		A,C
Engineered Safety Feature		
Component Cooling Water		A,B,X
Saltwater Cooling Water		a
Emergency Chilled Water		a
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		A
HVAC		A
SUMMARY		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		a,B,b
480 V (AC)		A,A*
120 V (AC)		
125 V (DC)		
Electrical Panels		A,A*,B
SUMMARY		NOTE 2

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,B*,a,C,X
NOTE 2 = A,A*,a,B,b

FIRE AREA/ZONE 3-AC-9-7

Location

Auxiliary Control Building - El 9'-0" - Cable Riser Gallery - 2390 square feet - Fig. 8-5

Combustible Material	Quantity
Cable insulation	51,237 lbs

Fire loading - 262,618 Btu/sq ft (Note 2)
Maximum permissible fire loading - 160,000 Btu/sq ft (Note 1)

Note 1: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials.

Note 2: The quantity of cable insulation called out above is based on 25% fill for all cable trays that are filled with cable up to 25% full by volume. For cable trays that are more than 25% full, the actual percentage fill has been used. This is extremely conservative, since very few trays are filled to greater than 25% and the actual plant average tray fill is significantly lower.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 1850°F and would involve cable insulation.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the area.

Fire Protection Equipment

The area contains an automatic water spray system with fixed temperature rate of rise actuation. Actuation by the heat detectors results in control room annunciation. Manual fire fighting equipment is available within the area. Ionization smoke detectors, located throughout the area, provide early warning alarm in the control room.

Construction

The east, west, and south walls of the area are reinforced concrete with a 3 hour rating. The north wall is a 2 hour rated plaster partition. Support columns are protected by vermiculite fireproofing. The floor adjacent to 2-AC-(-5)-169 is nonrated heavy concrete construction as is the floor to grade. The ceiling is 2 hour rated. The area communicates with the adjacent cable spreading room (3-AC-9-6) through three 1-1/2 hour rated doors. One 1-1/2 hour rated door separates the area from the lighting switchgear room (2-AC-9-8). A 28" diameter manhole cover allows access to the emergency chilled water pipe tunnel (2-AC-(-5)-169). The ventilation duct penetration

to the emergency chilled water pipe tunnel is not provided with a fire damper. The remainder of the ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers. Four 8 inch drains discharge into the room from the upper cable riser rooms at elevation 30 feet (2-AC-30-21) and 50 feet (2-AC-50-32 and 2-AC-50-33). Spray loaded check valves installed at the ends of the drain lines preclude communication of fumes/air between this room and the upper rooms in the event of a fire.

Safe Shutdown Equipment

Equipment Required for Hot Standby

NOTE: The following list of cables/equipment includes only those systems credited to achieve safe shutdown for a fire in this alternative shutdown fire area.

Unit 3

4160V - Train A and B Cables

480V - Train A Cables

AFW - Train A and C Cables

CCW - Train A, B and X Cables

CVCS - Train A and B Cables

DG - Train A Cables

ECW - Train A Cables

EP - Train A and B Cables

HVAC - Train A and B Cables

MFW - Train A Cables

MSS - Train A and B Cables

RCS - Train A Cables

RPS - Train A and C Cables

SDC - Train A and B Cables

SWC - Train A Cables

Unit 2

4160V - Train A and B Cables

FPDS ver. 3.2

FIRE AREA/ZONE: 2-AC-9-14

AREA: 2390 sq.ft.

DESCRIPTION: CABLE RISER GALLERY

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	27329 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	140076.65 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.75 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(2) 10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	south 2hr, others 3hr
Floor, Ceiling, Roof	2hr/ceiling, floor to 169, HC/grade
Penetrations	D, C, P, QP/28, 36, 37
Fixed Openings	none
Doors	(3)B/2-AC-9-5, B/2-AC-9-13

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A,A*
Reactor Protection System		A,C
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		A
Main Steam		A,A*,B
HVAC		a*,A,B
Auxiliary Feedwater		A,C
Engineered Safety Feature		
Component Cooling Water		A,B,X
Saltwater Cooling Water		a*
Emergency Chilled Water		A
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		A
HVAC		A
SUMMARY		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		A,B
480 V (AC)		A,A*
120 V (AC)		
125 V (DC)		
Electrical Panels		A,A*,B
SUMMARY		A,A*,B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,a*,B,C,X

FIRE AREA/ZONE 2-AC-9-14

Location

Auxiliary Control Building - El. 9'-0" - Cable Riser Gallery - 2390 square feet - Fig. 8-5

Combustible Material	Quantity
Cable insulation	27,329 lbs

Fire loading - 140,077 Btu/sq ft (Note 2)
Maximum permissible fire loading - 160,000 Btu/sq ft (Note 1)

Note 1: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials.

Note 2: The quantity of cable insulation called out above is based on 25% fill for all cable trays that are filled with cable up to 25% full by volume. For cable trays that are more than 25% full, the actual percentage fill has been used. This is extremely conservative, since very few trays are filled to greater than 25% and the actual plant average tray fill is significantly lower.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 1900°F and would involve cable insulation.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the area.

Fire Protection Equipment

The area contains an automatic water spray system with fixed temperature rate of rise actuation. Actuation by the heat detectors results in control room annunciation. Manual fire fighting equipment is available within the area. Ionization smoke detectors, located throughout the area, provide early warning alarm in the control room.

Construction

The east, west, and north walls of the area are reinforced concrete with a 3 hour rating. The south wall is 2 hour rated plaster construction. Support columns are protected by vermiculite fireproofing. The floor to 2-AC-(-5)-169 and the ceiling are 2 hour rated. The floor to grade is nonrated heavy concrete construction. The area communicates with the adjacent cable spreading room (2-AC-9-5) through three 1-1/2 hour rated doors. A 1-1/2 hour rated door separates the area from the lighting switchgear room (2-AC-9-13). All ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers. Four 8 inch drains discharge into the room from the upper cable riser rooms at elevation 30 feet (2-AC-30-28) and 50 feet (2-AC-50-36 and 2-AC-50-37). Spring loaded check valves installed at the ends of the drain lines preclude communication of fumes/air between this room and the upper rooms in the event of a fire.

Safe Shutdown Equipment

Equipment Required for Hot Standby

NOTE: The following list of cables/equipment includes only those systems credited to achieve safe shutdown for a fire in this alternative shutdown fire area.

Unit 2

4160V - Train A and B Cables

480V - Train A Cables

AFW - Train A and C Cables

CCW - Train A, B and X Cables

CVCS - Train A and B Cables

DG - Train A Cables

ECW - Train A Cables

EP - Train A and B Cables

HVAC - Train A and B Cables

MFW - Train A Cables

MSS - Train A and B Cables

RCS - Train A Cables

RPS - Train A and C Cables

SDC - Train A and B Cables

SWC - Train A Cables

Unit 3

4160V - Train A and B Cables

EP - Train A Cables

Equipment Required for Cold Shutdown

NOTE: The following list of cables/equipment includes only those systems credited to achieve safe shutdown for a fire in this alternative shutdown fire area.

CCW - Train A Cables

signal to close the valves. In the event that evacuation is required before these actions are completed, followup actions are performed as part of operator actions taken following control room evacuation.

Damage to Train B cables for the S/G 2E-089 atmospheric dump valve may occur. Operator action will be taken to deenergize and manually operate the valve.

RCS

Damage to Train A cables for pressurizer backup heaters may occur. Operator action will be taken to isolate the equipment from the control room and control it at the EVSD.

RPS

Damage to Train A and C cables for the reactor trip breakers may occur. Operator action will be taken to manually trip the reactor before leaving the control room.

SDC

Damage to cables for Train A and Train B SIT tank injection line isolation valves may occur. The valves are power locked out. Operator action will be taken to manually position the valves as required.

SWC

Cables in this fire area for the Train A saltwater cooling pumps are wrapped with a 1 hour fire rated barrier, with suppression and detection provided.

Damage to cables for the Train A CCW heat exchanger discharge valve may occur. Operator action will be taken to deenergize and manually position the valve as required.

Damage to cables for the Train A SWC pump discharge valve may occur. Operator action will be taken to deenergize the valve to fail it to its required position.

Unit 3

4160V

Damage to Unit 3 Train A cables may occur. Alternative controls at the switchgear will be used.

Damage to Unit 3 Train B cables may occur. Operator action will be taken to deenergize Train B to prevent spurious operations.

CCW

Although cables are not located in this fire area, alternate shutdown requires operations to leave the control room therefore an operator action to align the fire water hose station with the Train A CCW surge tank and use the diesel driven fire water pump to provide CCW make-up is required.

EP

Damage to cables for Train A HVAC control panel may occur. Loss of control room HVAC may occur as a result of the loss of the component. The loss of equipment ventilation may cause maloperation of equipment due to spuriously generated control signals.

Damage to cables for the Train A DG control panel may occur. Operator action will be taken to isolate the panel from the control room and operate the diesel locally.

Effects of Fire on Cold Shutdown Capability

Alternative shutdown capability is credited in the event of a fire in this fire area. Control room evacuation may be required. The effects on safe shutdown systems required for alternative shutdown capability are discussed below.

CCW

Damage to cables for the Train A SDC heat exchanger isolation valve may occur. Operator action will be taken to deenergize the valve to fail it to the required position.

HVAC

Damage to cables for the Train A LPSI pump room cooler may occur. Operator action will be taken to isolate the equipment from the control room and control it at the switchgear.

SDC

Damage to cables for the Train A LPSI pump may occur. Operator action will be taken to isolate the equipment from the control room and control it at the switchgear.

Damage to cables for Train B LPSI pump minimum flow line isolation valve may occur. Operator action will be taken to deenergize the Train B 4160V ESF switchgear and position the valve as required.

Damage to cables for the Train A SDC valves may occur. Operator action will be taken to deenergize and manually position each valve as required.

Damage to Train A cables for the LPSI temperature indicator may occur. Operator action will be taken to determine the temperature locally.

Damage to the Train A and Train B Containment Spray Isolation valves and associated cables may occur. Manual action will be taken to deenergize the power to the Train A valve at the Motor Control Center. Manual actions will be taken at the valve to place it in its required position.

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AC-9-16
AREA: 2461 sq.ft. **DESCRIPTION:** CORRIDOR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	5602 lbs.
Class A	18 lbs.
Charcoal	0 lbs.
Plastics	390 lbs.
Miscellaneous	8 lbs.

DESIGN BASIS FIRE

Fire Loading	30045.06 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	0.38 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	(3)
Portable Extinguishers	(4) 10B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr/148B, others/2hr
Floor, Ceiling, Roof	2hr/ceiling, floor to 169, HC/grade
Penetrations	D, C, P
Fixed Openings	none
Doors	A/8,13,9,11,5,6,10,12,148B, B/2-AC-9-15, B/2-AC-9-19, B/2-AC-9-18, B/2-AC-30-20A

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			B
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			B
HVAC			A,B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			a,A,B
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			a,A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			a,B
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			a,B,B*
SUMMARY			NOTE 1

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES
NOTE 1 = a,B,B*,X,+

FPDS ver. 3.2

FIRE AREA/ZONE: 2-AC-30-20A
AREA: 13490 sq.ft. **DESCRIPTION:** CONTROL ROOM/CABINET AREAS

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	9252 lbs.
Class A	2015 lbs.
Charcoal	0 lbs.
Plastics	2918 lbs.
Miscellaneous	3799 lbs.

DESIGN BASIS FIRE

Fire Loading	16407.90 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.21 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1)in areas 2-AC-30-28 and 3-AC-30-21
Portable Extinguishers	(11)10B:C,(8)2A,(3)10A:80B:C,(2)20B:C,#
Detectors (type)	ionization (local), heat detectors (local)

FIRE RESISTANCE RATING

Walls	SEE TEXT
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P, ND/20B,20C,20D,20E
Fixed Openings	none
Doors	A/20B,20C, (3)A/20E, A/3-AC-30-21, A/2-AC-30-28, B/2-AC-9-16

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A*,A
Reactor Protection System		A,C
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		A
Main Steam		A,A*,B
HVAC		A,B
Auxiliary Feedwater		A,C
Engineered Safety Feature		
Component Cooling Water		A,B,X
Saltwater Cooling Water		A
Emergency Chilled Water		A
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		A
HVAC		A
SUMMARY		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		A,B
480 V (AC)		A*,A
120 V (AC)		
125 V (DC)		
Electrical Panels		A*,A,B,X
SUMMARY		X,A*,A,B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,C,X

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-AC-30-20B

AREA: 1104 sq.ft. **DESCRIPTION:** COMPUTER ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	1346 lbs.
Class A	1209 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	23659.87 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.30 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	halon
Hose Stations	none
Portable Extinguishers	none, (1)10A:80B:C & (1)10B:C in 20A
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	1hr/20A, 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	C, P, D, ND/20A
Fixed Openings	none
Doors	A/2-AC-30-20A

HOT STANDBY SYSTEMS

Reactor Coolant
Reactor Protection System
Shutdown Cooling
Chemical and Volume Ctrl
Main Feedwater
Main Steam
HVAC
Auxiliary Feedwater
Engineered Safety Feature
Component Cooling Water
Saltwater Cooling Water
Emergency Chilled Water
Diesel Generator Systems

Equipment	Valves	Cable
		A,B
		A,B
A		

COLD SHUTDOWN SYSTEMS

Shutdown Cooling
CCW (To SDC)
HVAC
SUMMARY

Equipment	Valves	Cable
A		A,B

ESSENTIAL ELECTRIC SYSTEMS

220 KV (AC)
4160 V (AC)
480 V (AC)
120 V (AC)
125 V (DC)
Electrical Panels
SUMMARY

Equipment	MCC and Switchgear	Cable
		X
		A,B,C,D,X
		A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2 FIRE AREA/ZONE: 2-AC-30-20C

AREA: 1104 sq.ft. DESCRIPTION: COMPUTER ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	1214 lbs.
Class A	200 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	14883.61 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.19 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	halon
Hose Stations	none
Portable Extinguishers	none, (1)10B:C in 2-AC-30-20A
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	1hr/20A, 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	P,C, ND/20A
Fixed Openings	none
Doors	A/2-AC-30-20A

HOT STANDBY SYSTEMS

Reactor Coolant
Reactor Protection System
Shutdown Cooling
Chemical and Volume Ctrl
Main Feedwater
Main Steam
HVAC
Auxiliary Feedwater
Engineered Safety Feature
Component Cooling Water
Saltwater Cooling Water
Emergency Chilled Water
Diesel Generator Systems

Equipment	Valves	Cable
		b
		A, B
B		A, B

COLD SHUTDOWN SYSTEMS

Shutdown Cooling
CCW (To SDC)
HVAC
SUMMARY

Equipment	Valves	Cable
B		A, B

ESSENTIAL ELECTRIC SYSTEMS

220 KV (AC)
4160 V (AC)
480 V (AC)
120 V (AC)
125 V (DC)
Electrical Panels
SUMMARY

Equipment	MCC and Switchgear	Cable
		X
		A
		A, B, C, D
		A, B, C, D, X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2 FIRE AREA/ZONE: 3-AC-30-21

AREA: 2276 sq.ft. DESCRIPTION: CABLE RISER GALLERY

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	25309 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	136221.98 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.70 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(1)20B:C,(2)10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north 2hr, others 3hr
Floor, Ceiling, Roof	2hr
Penetrations	D, P, C, QP/7
Fixed Openings	none
Doors	A/3-SE-30-142A, A/3-PE-30-2C, A/2-AC-30-20A,B/2-AC-30-22

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A,A*,B*
Reactor Protection System		A,C
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		A
Main Steam		A,A*,B
HVAC		a,A,B
Auxiliary Feedwater		a,A,C
Engineered Safety Feature		
Component Cooling Water		a,A,B,X
Saltwater Cooling Water		a,A
Emergency Chilled Water		a
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		a,A,B
CCW (To SDC)		A
HVAC		a
SUMMARY		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		a,B
480 V (AC)		A,A*
120 V (AC)		A*
125 V (DC)		
Electrical Panels		A,A*,B,X
SUMMARY		Xa,A,A*,B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,B*,a,C,X

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AC-30-22
AREA: 582 sq.ft. **DESCRIPTION:** CORRIDOR/STAIR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	194 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	4087.52 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.05 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(1)
Portable Extinguishers	(1)10B:C,(1)10A:80B:C
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/148D, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D,P,C
Fixed Openings	none
Doors	NR/2-TB-34-148D, B/3-AC-30-21, A/23, B/29,19,64

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			B
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			B
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			A
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			A,X
SUMMARY			A,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : NO

FIRE AREA/ZONE 2-AC-30-22

Location

Auxiliary Control Building - El. 30'-0" - Corridor/Stair - 582 square feet - Fig. 8-6

Combustible Material	Quantity
Cable insulation	194 lbs

Fire loading - 4,088 Btu/sq ft (Note 2)
Maximum permissible fire loading - 13,000 Btu/sq ft (Note 1)

Note 1: The maximum permissible loading is based on an evenly distributed loading of combustible materials.

Note 2: The quantity of cable insulation called out above is based on 25% fill for all cable trays that are filled with cable up to 25% full by volume. For cable trays that are more than 25% full, the actual percentage fill has been used. This is extremely conservative, since very few trays are filled to greater than 25% and the actual plant average tray fill is significantly lower.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 300°F and would involve cable insulation.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the area.

Fire Protection Equipment

Manual fire fighting equipment is available within the area. No fire detection equipment is provided within the area.

Construction

The north and west walls of the area are constructed of reinforced concrete. The west wall adjoining zone 2-TB-34-148D has a 3 hour fire rating; at other elevations, the wall is 2 hour rated. The north wall has a 2 hour rating. The east and south walls are 2 hour rated metal framed plaster walls. The floor and ceiling are 2 hour rated. A non-rated double door communicates with the turbine building (2-TB-34-148D). The area communicates with the fan room (2-AC-30-23) through a 3 hour rated door, the cable riser gallery (3-AC-30-21), the 50' elevation lobby (2-AC-50-29), and the 70' elevation corridor (2-AC-70-64) through 1-1/2 hour rated doors. The area is not ventilated. All ventilation duct penetrations passing through the area are provided with 1-1/2 hour rated fire dampers. One door communicates to 2 AC-9-19.

Safe Shutdown Equipment

Equipment Required for Hot Standby

220 KV - Train X Cables

CVCS - Train B Cables

ECW - Train A Cables

EP - Train A and X Cables

RCS - Train B Cables

Equipment Required for Cold Shutdown

None

High/Low Pressure Interface Equipment

None

Spurious Operation Equipment

None

Alternative Shutdown Equipment

None

Safety Related Equipment Not Required for Safe Shutdown

HVAC: Trains A and B - ductwork

Technical Specification Barriers

For definition of the barriers requiring surveillance per Technical Specification 3.7.9, refer to Figures 8-6, 8-7, and 8-8, sheet 3.

Consequences of Design Basis Fire

All manual operator actions required to achieve safe shutdown for a fire in this area/zone are performed outside the area/zone unless otherwise stated.

Effects of Fire on Hot Standby Capability

220KV

Damage to the Train X cable to the Unit 3 grid feeder position may occur. This damage may induce loss of offsite power for Unit 3.

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AC-30-23
AREA: 1059 sq.ft. **DESCRIPTION:** FAN ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	244 lbs.
Class A	0 lbs.
Charcoal	21471 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	264767.64 BTU's/sq.ft.
Fire Loading - Max Permiss	(SEE TEXT.)
Fire Duration	3.31 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray system for charcoal
Hose Stations	none,(1) in 2-AC-30-22
Portable Extinguishers	none,(1)10B:C,(1)10A:80B:C in 2-AC-30-22
Detectors (type)	ionization,temp. det.& heat det. for char.

FIRE RESISTANCE RATING

Walls	west 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C,D,P
Fixed Openings	none
Doors	A/2-AC-30-22

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			B
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			B
Main Feedwater			
Main Steam			
HVAC	A		A
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water		A	A
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	A	A	A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			+
120 V (AC)			
125 V (DC)			
Electrical Panels			A,X
SUMMARY			A,X,+

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : NO
Spurious Operation : NO

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AC-30-27
AREA: 582 sq.ft. **DESCRIPTION:** CORRIDOR/STAIR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	287 lbs.
Class A	27 lbs.
Charcoal	0 lbs.
Plastics	13 lbs.
Miscellaneous	5 lbs.

DESIGN BASIS FIRE

Fire Loading	6855.37 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	0.09 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	(1)
Portable Extinguishers	(1)10B:C, (1)10A:80B:C
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/148D 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	D,C,P
Fixed Openings	none
Doors	A/26, B/64,29,15,28, NR/2-TB-34-148D

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			B
Main Feedwater			
Main Steam			
HVAC			A,B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			A
Emergency Chilled Water			A,B
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			
480 V (AC)			+
120 V (AC)			
125 V (DC)			
Electrical Panels			A,X
SUMMARY			A,X,+

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : NO
Spurious Operation : NO

FIRE AREA/ZONE 2-AC-30-27

Location

Auxiliary Control Building - El. 30'-0" - Corridor/Stair - 582 square feet - Fig. 8-6

Combustible Material	Quantity
Cable insulation	287 lbs
Class A	27 lbs
Plastics	13 lbs
Rubber	5 lbs

Fire loading - 6855.37 Btu/sq. ft. (Note 2)
Maximum permissible fire loading - 160,000 Btu/sq. ft. (Note 1)

Note 1: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials.

Note 2: The quantity of cable insulation called out above is based on 25% fill for all cable trays that are filled with cable up to 25% full by volume. For cable trays that are more than 25% full, the actual percentage fill has been used. This is extremely conservative, since very few trays are filled to greater than 25% and the actual plant average tray fill is significantly lower.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 500°F and would involve cable insulation.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the area.

Fire Protection Equipment

An automatic wet pipe sprinkler system is provided for the corridor area. In addition, manual fire fighting equipment is available within the area.

Construction

The south and west walls are reinforced concrete construction. The west wall adjoining 2-TB-34-148D is 3 hour rated. The south wall is 2 hour rated. The east and north walls are 2 hour rated metal framed plaster walls. The floor and ceiling are 2 hour rated. A non-rated double door separates the area from the turbine building (2-TB-34-148D).The zone communicates with the fan room (2-AC-30-26) through a 3 hour rated door and the staircase (2-AC-9-15), the cable riser gallery (2-AC-30-28), the 50' elevation lobby (2-AC-50-29), and the 70' elevation corridor (2-AC-70-64) through 1-1/2 hour rated doors. Ventilation ducts passing through the area are provided with 1-1/2 hour rated fire dampers.

Safe Shutdown Equipment

Equipment Required for Hot Standby

220 KV - Train X Cables

CVCS - Train B Cables

ECW - Train A and B Cables

EP - Train A and X Cables

HVAC - Train A and B Cables

SWC - Train A Cables

Equipment Required for Cold Shutdown

None

High/Low Pressure Interface Equipment

None

Spurious Operation Equipment

None

Alternative Shutdown Equipment

None

Safety Related Equipment Not Required for Safe Shutdown

HVAC: Train B - power cable

Technical Specification Barriers

For definition of the barriers requiring surveillance per Technical Specification 3.7.9, refer to Figures 8-6, 8-7, and 8-8, sheet 3.

Consequences of Design Basis Fire

All manual operator actions required to achieve safe shutdown for a fire in this area/zone are performed outside the area/zone unless otherwise stated.

Effects of Fire on Hot Standby Capability

220 KV

Damage to cable for the Unit 2 Train X grid feeder position may occur. This damage may induce loss of offsite power for Unit 2.

FPDS ver. 3.2

FIRE AREA/ZONE: 2-AC-30-28
AREA: 2276 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	24755 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	133236.23 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.67 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(1)20B:C,(2)10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	south 2hr, others 3hr
Floor, Ceiling, Roof	2hr
Penetrations	D,C,P,QP/14
Fixed Openings	none
Doors	A/2-SE-30-142A, A/2-PE-30-2C A/2-AC-30-20A, B/2-AC-30-27

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,A*,B*
Reactor Protection System			A,C
Shutdown Cooling			A,B
Chemical and Volume Ctrl			A,B
Main Feedwater			A
Main Steam			A,A*,B*
HVAC			a,A,B
Auxiliary Feedwater			a,C
Engineered Safety Feature			
Component Cooling Water			a,B,X
Saltwater Cooling Water			a
Emergency Chilled Water			A
Diesel Generator Systems			A

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			a,B
CCW (To SDC)			A
HVAC			a
SUMMARY			NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			A,B
480 V (AC)			A,A*
120 V (AC)			A*
125 V (DC)			
Electrical Panels			A,A*,B,X
SUMMARY			X,A,A*,B

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES
NOTE 1 = A,A*,B,B*,a,C,X

FIRE AREA/ZONE 2-AC-30-28

Location

Auxiliary Control Building - El. 30'-0" - Cable Riser Gallery - 2276 square feet - Fig. 8-6

Combustible Material	Quantity
Cable insulation	24,755 lbs

Fire loading - 133,237 Btu/sq ft (Note 2)
Maximum permissible fire loading - 160,000 Btu/sq. ft. (Note 1)

Note 1: The maximum permissible loading is based on an evenly distributed loading of combustible materials.

Note 2: The quantity of cable insulation called out above is based on 25% fill for all cable trays that are filled with cable up to 25% full by volume. For cable trays that are more than 25% full, the actual percentage fill has been used. This is extremely conservative, since very few trays are filled to greater than 25% and the actual plant average tray fill is significantly lower.

Design Basis Fire

The design basis fire is postulated to be a fire that reaches a maximum temperature of 1850°F and would involve cable insulation.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the area.

Fire Protection Equipment

The area contains an automatic water spray system with fixed temperature rate of rise actuation. Actuation by the heat detectors results in control room annunciation. Manual fire fighting equipment is available within the area. Ionization detectors, located throughout the area, provide early warning alarm in the control room.

Construction

The east, west, and north walls are reinforced concrete with a 3 hour rating. The west half of the south wall is concrete, the east half of the south wall is metal framed plaster; both walls have a 2 hour rating. The floor and ceiling are 2 hour rated. The area communicates with the penetration building (2-PE-30-2C) through a 3 hour UL equivalent door. A second 3 hour UL equivalent door opens to the safety equipment building (2-SE-30-142A) and a 1-1/2 hour rated door separates the area from the corridor/stair (2-AC-30-27). One 3 hour door separates the area from the control room (2-AC-30-20A). Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. No ventilation ducts penetrate 3 hour rated walls. Two drain lines discharge to the lower cable riser gallery (2-AC-9-14). Spring loaded check valves preclude the communication of fumes/air between that room and the lower riser gallery.

Safe Shutdown Equipment

Equipment Required for Hot Standby

NOTE: The following list of cables/equipment includes only those systems credited to achieve safe shutdown for a fire in this alternative shutdown fire area.

Unit 2

4160V - Train A and B Cables

480V - Train A Cables

AFW - Train A and C Cables

CCW - Train A, B and X Cables

CVCS - Train A and B Cables

DG - Train A Cables

ECW - Train A Cables

EP - Train A, B and X Cables

HVAC - Train A and B Cables

MFW - Train A Cables

MSS - Train A and B Cables

RCS - Train A Cables

RPS - Train A and C Cables

SDC - Train A and B Cables

SWC - Train A Cables

Unit 3

4160V - Train A and B Cables

EP - Train A Cables

FPDS ver. 3.2 FIRE AREA/ZONE: 3-AC-50-32

AREA: 1458 sq.ft. DESCRIPTION: CABLE RISER GALLERY

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	13834 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	116230.61 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.45 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(1)10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	east and south 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P, QP/7
Fixed Openings	none
Doors	B/3-AC-50-31,(2)B/3-AC-50-60, A/3-AC-50-33,A/3-PE-45-3A

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		NOTE 1
Reactor Protection System		B,D
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		
Main Steam		NOTE 2
HVAC		A,B,b
Auxiliary Feedwater		A,B
Engineered Safety Feature		A,C,D
Component Cooling Water		A,B,X
Saltwater Cooling Water		A
Emergency Chilled Water		A
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		
HVAC		A
SUMMARY		NOTE 3

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		X
4160 V (AC)		A,B
480 V (AC)		A,A*
120 V (AC)		A*,+
125 V (DC)		+
Electrical Panels		NOTE 4
SUMMARY		NOTE 4, +

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

N.1=A,A*,B,B*,b,C,D N.3=##,b,A*,B*

N.2=A,A*,b,B,C,D N.4=##,b,A*,D*

FPDS ver. 3.2

FIRE AREA/ZONE: 2-AC-50-35
AREA: 1544 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM 2B

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	9577 lbs.
Class A	8 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	3 lbs.

DESIGN BASIS FIRE

Fire Loading	76068.54 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	0.95 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	(1)10B:C,(2)10B:C in 2-AC-50-29
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	west 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, D
Fixed Openings	none
Doors	(2)A/2-AC-50-29, B/2-AC-50-36

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			B,B*
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Ctrl			A,B
Main Feedwater			
Main Steam			B
HVAC	B		B
Auxiliary Feedwater			B
Engineered Safety Feature			B
Component Cooling Water			B
Saltwater Cooling Water			B
Emergency Chilled Water			B
Diesel Generator Systems			B

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			B
SUMMARY	B		A,B,B*

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)	B	B	B
480 V (AC)	B	B	B
120 V (AC)	B		B,D
125 V (DC)			B,D
Electrical Panels	B		B,X,B*
SUMMARY	B	B	B,D,X,B*

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

FPDS ver. 3.2 FIRE AREA/ZONE: 2-AC-50-37

AREA: 1566 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	15296 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	119655.39 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.50 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	(1)10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north and east 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D,C,P,QP/14
Fixed Openings	none
Doors	(2) B/2-AC-50-40, B/2-AC-50-38, A/2-PE-45-3A, (2) A/2-AC-50-36

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		NOTE 1
Reactor Protection System		B,D
Shutdown Cooling		A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		
Main Steam		NOTE 1
HVAC		A,b
Auxiliary Feedwater		A,B,b
Engineered Safety Feature		A,C,D
Component Cooling Water		A,B,X
Saltwater Cooling Water		A
Emergency Chilled Water		A,b
Diesel Generator Systems		A

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		
HVAC		A
SUMMARY		NOTE 2

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		X
4160 V (AC)		A,B
480 V (AC)		A,A*
120 V (AC)		A*,+
125 V (DC)		+
Electrical Panels		NOTE 3
SUMMARY		NOTE 3

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

N.1 = A,A*,b,C,D N.2 = #,A*,a,b,X

N.3 = A,A*,#,D,D*,X,+

FPDS ver. 3.2 FIRE AREA/ZONE: 2-AC-50-40

AREA: 1900 sq.ft. DESCRIPTION: SWITCHGEAR ROOM 2A

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	9849 lbs.
Class A	8 lbs.
Charcoal	0 lbs.
Plastics	490 lbs.
Miscellaneous	3 lbs.

DESIGN BASIS FIRE

Fire Loading	66660.73 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	0.83 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	(1)10B:C, (1)20B:C in 2-AC-50-29
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, D
Fixed Openings	none
Doors	(2)B/2-AC-50-37, A/2-AC-50-29

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,C,A*
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Ctrl			A
Main Feedwater			
Main Steam			A,C
HVAC	A		A
Auxiliary Feedwater			A
Engineered Safety Feature			A,C
Component Cooling Water			A,B
Saltwater Cooling Water			A
Emergency Chilled Water			A
Diesel Generator Systems			A

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			A
SUMMARY	A		A,B,C,A*

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)	A	A	A
480 V (AC)	A	A	A,A*
120 V (AC)	A		A,C,+
125 V (DC)			A,C
Electrical Panels	A		NOTE 1
SUMMARY	A	A	NOTE 1, +

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,C,X

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AC-50-41

AREA: 242 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	673 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	34045.20 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	0.43 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) in 2-AC-50-29
Portable Extinguishers	none,(1)10B:C in 2-AC-50-29
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, D
Fixed Openings	none
Doors	A/2-AC-50-29

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			X
SUMMARY			X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-AC-50-60
AREA: 1900 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM 3A

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	16789 lbs.
Class A	8 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	3 lbs.

DESIGN BASIS FIRE

Fire Loading	108315.01 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.35 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	(1) 10B:C, (1)20B:C in 2-AC-50-29
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P
Fixed Openings	none
Doors	A/2-AC-50-29, (2)B/3-AC-50-32

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,C,A*
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Ctrl			A
Main Feedwater			
Main Steam			A,C
HVAC	A		A
Auxiliary Feedwater			A
Engineered Safety Feature			A,C
Component Cooling Water			A,B
Saltwater Cooling Water			A
Emergency Chilled Water			A
Diesel Generator Systems			A

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			A
SUMMARY	A		A,B,C,A*

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)	A	A	A
480 V (AC)	A	A	A,A*
120 V (AC)	A		A,C,+
125 V (DC)			A,C
Electrical Panels	A		NOTE 1
SUMMARY	A	A	NOTE 1, +

ASSOCIATED CIRCUITS OF CONCERN
H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES
NOTE 1 = A,A*,B,C,X

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AR-9-88

AREA: 299 sq.ft. **DESCRIPTION:** CHARGING PUMP RM.

COMBUSTIBLES

Oil & Grease	75 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	4501.51 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.06 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, (1) 10A:80B:C in 2-AR-9-76
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	north and south 3hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, NP/76, ND/76, NC/76
Fixed Openings	none
Doors	W/2-AR-9-76

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl	A/B		A,B
Main Feedwater			
Main Steam			
HVAC	A,B		A,B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	A,B,A/B		A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)	A/B		+
120 V (AC)			
125 V (DC)			
Electrical Panels			B
SUMMARY	A/B		B,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : NO

FPDS ver. 3.2

FIRE AREA/ZONE: 3-AR-9-92

AREA: 299 sq.ft. **DESCRIPTION:** CHARGING PUMP RM.

COMBUSTIBLES

Oil & Grease	75 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	4501.51 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.06 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, (1)10A:80B:C in 2-AR-9-76
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	south and north 3hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, NP/76, ND/76
Fixed Openings	none
Doors	W/2-AR-9-76

HOT STANDBY SYSTEMS

- Reactor Coolant
- Reactor Protection System
- Shutdown Cooling
- Chemical and Volume Ctrl
- Main Feedwater
- Main Steam
- HVAC
- Auxiliary Feedwater
- Engineered Safety Feature
- Component Cooling Water
- Saltwater Cooling Water
- Emergency Chilled Water
- Diesel Generator Systems

Equipment	Valves	Cable
A/B		A,B
A,B		A,B

COLD SHUTDOWN SYSTEMS

- Shutdown Cooling
- CCW (To SDC)
- HVAC
- SUMMARY

Equipment	Valves	Cable
A,B,A/B		A,B

ESSENTIAL ELECTRIC SYSTEMS

- 220 KV (AC)
- 4160 V (AC)
- 480 V (AC)
- 120 V (AC)
- 125 V (DC)
- Electrical Panels
- SUMMARY

Equipment	MCC and Switchgear	Cable
A/B		+
		B
A/B		B,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : NO

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-AR-24-96
AREA: 491 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP TK. ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	0.00 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-24-94
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	CH/80
Doors	B/2-AR-24-94, B/2-AR-37-102A, B/2-AR-50-111A

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl	N	A,B	A,B
Main Feedwater			
Main Steam			
HVAC			B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY		A,B	A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			+
120 V (AC)			
125 V (DC)			
Electrical Panels			A,B,X
SUMMARY			A,B,X,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2 **FIRE AREA/ZONE:** 2-AR-24-100
AREA: 202 sq.ft. **DESCRIPTION:** LETDOWN HT. EXCH. RM.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	0.00 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1)2-AR-24-94
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	2hr
Penetrations	P, C, ND/94, NP/94
Fixed Openings	none
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			B
SUMMARY			B,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : NO

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-AR-24-101
AREA: 202 sq.ft. **DESCRIPTION:** LETDOWN HT. EXCH. RM.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	0.00 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) 2-AR-24-94
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	2hr
Penetrations	P, C, ND/94, NP/94
Fixed Openings	none
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			+
120 V (AC)			
125 V (DC)			
Electrical Panels			B
SUMMARY			B,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : NO

FPDS ver. 3.2 FIRE AREA/ZONE: 2-AR-37-102A

AREA: 23071 sq.ft. **DESCRIPTION:** CORRIDOR & RMS.

COMBUSTIBLES

Oil & Grease	355 lbs.
Cable	3665 lbs.
Class A	32005 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	20 lbs.

DESIGN BASIS FIRE

Fire Loading	13054.08 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.16 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers in rooms 339, 337, 336
Hose Stations	(4)
Portable Extinguishers	(4) 10B:C, (1) 2A, (4) 10A:80B:C
Detectors (type)	ionization partial,heat detectors partial

FIRE RESISTANCE RATING

Walls	to other Bldgs,73,75,107,109/3hr,NR/102B,others2hr
Floor, Ceiling, Roof	2hr, NR/102B
Penetrations	P, C, D, ND/102B, NP/exterior
Fixed Openings	CH/74,81,82,94,102B,111A,116
Doors	A/3-AR-37-104,A/2-AR-37-105,B/2-AR-9-90, NR/exterior, B/others

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System	A,B,C,D		A,B,C,D
Shutdown Cooling			
Chemical and Volume Ctrl		B	A,B
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			X
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	A,B,C,D	B	A,B,C,D,X

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	NCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			+
Electrical Panels	A,B,C,D		A,B,C,D,X
SUMMARY	A,B,C,D		##, +

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FPDS ver. 3.2

FIRE AREA/ZONE: 2-AR-50-111A
DESCRIPTION: CORRIDOR & ROOMS

AREA: 19262 sq.ft.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	1 lbs.
Class A	2500 lbs.
Charcoal	0 lbs.
Plastics	300 lbs.
Miscellaneous	100 lbs.

DESIGN BASIS FIRE

Fire Loading	1300.60 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.02 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(3)
Portable Extinguishers	(3) 10A:80B:C, (2) 10B:C
Detectors (type)	ionization (local)

FIRE RESISTANCE RATING

Walls	3hr/3A, 73, 102A, 75, 107,109,NR/111B,2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	C, D
Fixed Openings	OD/111B, CH/102A,116, louvers/111B
Doors	B/90,86,77,95,99,98,96,110,108, NR/111B

HOT STANDBY SYSTEMS

- Reactor Coolant
- Reactor Protection System
- Shutdown Cooling
- Chemical and Volume Ctrl
- Main Feedwater
- Main Steam
- HVAC
- Auxiliary Feedwater
- Engineered Safety Feature
- Component Cooling Water
- Saltwater Cooling Water
- Emergency Chilled Water
- Diesel Generator Systems

Equipment	Valves	Cable
		A,B
		A,B,X

COLD SHUTDOWN SYSTEMS

- Shutdown Cooling
- CCW (To SDC)
- HVAC
- SUMMARY

Equipment	Valves	Cable
		A,B,X

ESSENTIAL ELECTRIC SYSTEMS

- 220 KV (AC)
- 4160 V (AC)
- 480 V (AC)
- 120 V (AC)
- 125 V (DC)
- Electrical Panels
- SUMMARY

Equipment	MCC and Switchgear	Cable
		A,X
		A,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

UNITS 2/3 YARD AREA

The Units 2/3 yard area is an exposed fire area bounded by the protected area fence. Most walls of the fire areas/zones which communicate with the yard area are heavy concrete, some of which are 2 or 3 hour rated. The fire area is divided into two (2) fire zones:

2-YD-30-200A - Unit 2 Yard Zone
2-YD-30-200B - Unit 3 Yard Zone

The yard area contains a portion of the following systems, which can be used for, or support, safe shutdown and cooldown:

- Auxiliary Feedwater
- Emergency Chilled Water
- Diesel Generator
- Main Steam System
- Essential Electric Systems

The types of fire protection/detection equipment available in or near this fire area consist of the following:

- Portable extinguishers
- Ultraviolet, thermal, and ionization fire detectors
- Underground fire water main with hydrants
- Fixed water spray systems
- Wet pipe water sprinkler systems
- Halon System

FIRE AREA/ZONE	CONTAINS SAFE SHUTDOWN EQUIPMENT	CONTAINS SAFETY RELATED EQUIPMENT NOT REQUIRED FOR SAFE SHUTDOWN	PAGE NO.	FIGURE NO.
2-YD-30-200A	Yes	Yes	2/3YD-1	8-26A
2-YD-30-200B	Yes	Yes	2/3YD-9	8-26A

FPDS ver. 3.2

FIRE AREA/ZONE: 2-YD-30-200A
AREA: 170000 sq.ft. **DESCRIPTION:** YARD AREA UNIT 2

COMBUSTIBLES

Oil & Grease	1389636 lbs.
Cable	0 lbs.
Class A	508125 lbs.
Charcoal	0 lbs.
Plastics	1510 lbs.
Miscellaneous	21860 lbs.

DESIGN BASIS FIRE

Fire Loading	178733.59 BTU's/sq.ft.
Fire Loading - Max Permiss	(SEE TEXT.)
Fire Duration	2.23 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray, wet pipe, halon/See Text
Hose Stations	hydrants in yard
Portable Extinguishers	(1) 160B:C, (6) 10B:C, (2) 10A:80B:C
Detectors (type)	thermal/Lube Oil Tank Area,inonization/STA trailer

FIRE RESISTANCE RATING

Walls	HC, 1hr/153, 2hr/128, 150, 3hr/See Text
Floor, Ceiling, Roof	no roof, ground, 2hr/159, 160, NR/145B
Penetrations	P, C, D, NP, NC, ND
Fixed Openings	CH/159,160,louvers/142A,M/142B,OP/148C,148D,148F,
Doors	L/73, NR/102A, NR/127, NR/128, (2)NR/148A, NR/153, X/157, X/156, (2)NR/161A, NR/164, A/171, X/171

HOT STANDBY SYSTEMS

- Reactor Coolant
- Reactor Protection System
- Shutdown Cooling
- Chemical and Volume Ctrl
- Main Feedwater
- Main Steam
- HVAC
- Auxiliary Feedwater
- Engineered Safety Feature
- Component Cooling Water
- Saltwater Cooling Water
- Emergency Chilled Water
- Diesel Generator Systems

Equipment	Valves	Cable
		A,B
N		A,B
		X
		A,B
		A,B

COLD SHUTDOWN SYSTEMS

- Shutdown Cooling
- CCW (To SDC)
- HVAC
- SUMMARY

Equipment	Valves	Cable
N		A,B,X

ESSENTIAL ELECTRIC SYSTEMS

- 220 KV (AC)
- 4160 V (AC)
- 480 V (AC)
- 120 V (AC)
- 125 V (DC)
- Electrical Panels
- SUMMARY

Equipment	MCC and Switchgear	Cable
X		X
		A,B
		A,B
		A,B
X		A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2 FIRE AREA/ZONE: 2-YD-30-200B
AREA:170000 sq.ft. DESCRIPTION: YARD AREA UNIT 3

COMBUSTIBLES

Oil & Grease	578438 lbs.
Cable	0 lbs.
Class A	182867 lbs.
Charcoal	0 lbs.
Plastics	30 lbs.
Miscellaneous	19065 lbs.

DESIGN BASIS FIRE

Fire Loading	75525.04 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.94 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	
Hose Stations	hydrants in yard
Portable Extinguishers	(3) 10B:C, (2) 10A:80B:C
Detectors (type)	

FIRE RESISTANCE RATING

Walls	HC, 1hr/153 2hr/128, 150, 173, 3hr/See Text
Floor, Ceiling, Roof	no roof, ground, 2hr/159, 160, NR/145B
Penetrations	P, C, D, NP, NC, ND
Fixed Openings	CH, louvers, M, OP, OH, MH/See Text
Doors	L/24, L/75, NR/102A, NR/127, NR/128, (2)NR/148A, NR/153, X/157, X/156, (2)NR/161A, NR/164, A/171, X/171, X/156

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			A,B
HVAC			
Auxiliary Feedwater	N		A,B
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			A,B
Diesel Generator Systems			A,B

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	N		A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)	X		X
4160 V (AC)			A,B
480 V (AC)			A,B
120 V (AC)			
125 V (DC)			
Electrical Panels			A,B
SUMMARY	X		A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FIRE AREA/ZONE 2-YD-30-200B

Location

Yard - El. 30'-0" - Yard Area - 170,000 square feet - Fig. 8-26A.

Combustible Material	Quantity
Diesel Fuel Oil	1,263 lbs.
Lubricating Oil	11,458 lbs.
Transformer Oil	566,460 lbs.
Paint	7,624 lbs.
Class A Combustibles	182,867 lbs.
EHC Fluid	5,005 lbs.
Acetone/Solvent	6,171 lbs.
Hydrogen	260 lbs.
Plastics	30 lbs.
Rubber	5 lbs.

Fire loading - 75,526 Btu/sq ft
Maximum permissible fire loading - 80,000 Btu/sq ft (Note 1)

Note 1: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials using the ratings of fire-rated walls/barriers located in the Yard area in accordance with the methodology defined in Section 4.0 of this document. This conservative value does not necessarily reflect the true maximum permissible fire loading in this Fire Area/Zone because of the fact that the in-situ combustible loadings are localized and removed from the vicinity of safe shutdown equipment in the area. The Yard area encompasses large, open areas along with several structures, which is not consistent with the majority of the fire areas/zones contained within the UFHA. All areas with high combustible loadings are provided with suppression, detection, containment fire protection features or are adequately isolated. In addition, administrative controls are instituted which routinely inspect for excessive transient combustibles above the administratively controlled limits, and compensatory measures are taken in the event that transient combustibles exceed the administrative limits.

Note 2: Combustible Control Zones have been established throughout the yard area. These zones, which limit the combustibles allowed within 20 feet of a given wall, are shown in Section 8.0 on the Technical Specification Barrier drawings.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve oil, paints, solvents, Class A combustibles and miscellaneous combustibles.

The maximum credible fire in this zone is limited by the large surface area and the localized nature and spacing of the combustible loading. The design basis fire is expected to be limited to a fire in the vicinity of one of the following hazards: main transformers or auxiliary transformers. Limited size fires resulting from transient combustibles can occur at other locations.

The fire loading is conservatively based on the simultaneous total combustion of all combustibles in the zone.

Fire Protection Equipment

Manual fire fighting equipment is available within the zone. In addition, hose stream coverage is available from the yard hydrants. Seismic fire pumps and water tank units are also available for fire suppression activities in the yard area.

Station transformers are provided with curbs to limit possible spread of transformer oil.

Construction

The zone consists of the Unit 3 portion the Unit 2/3 yard area enclosed by the protected area fence. A 1 hour rated wall exists between 2-YD-30-200B and 3-TB-30-153. 2 hour rated barriers separate 2-YD-30-200B from 3-FH-30-128, 3-TB-7-150, and 3-SE-30-173. 3 hour walls separate 2-YD-30-200B from 3-PE-30-2C, 3-AR-37-102A, 3-CT-(-2)-142B, 3-CT-16-142C, and 3-TB-7-149. Non-rated walls exist between 2-YD-30-200B and the remaining zones. The yard area is open to the atmosphere (no roof). For detailed information pertaining to zones which communicate with the yard, refer to figure 8-26A and the Section 7.0 discussion of the zone in question.

Safety Related Equipment not Required for Safe Shutdown

Safety Injection:
Valves

Main Steam:
Valves

Main Feedwater:
Equipment and Valves

HVAC:
Valves

4KV:
Equipment and Valves

Nitrogen:
Valves

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-CO-15-1A

AREA: 1335 sq.ft. **DESCRIPTION:** GENERATOR ROOM #2

COMBUSTIBLES

Oil & Grease	2827 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	17 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	38100.94 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.48 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	semiautomatic water spray sys for RC pumps
Hose Stations	none,(1)seismic available in 3-CO-15-1C
Portable Extinguishers	none, 10A:80B:C, 10B:C in 3-CO-15-1C
Detectors (type)	heat detectors for reactor coolant pumps

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1C
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N,B		B*,A*,A,B
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	N,B		B*,A*,A,B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			+
120 V (AC)			+
125 V (DC)			
Electrical Panels			
SUMMARY			+

ASSOCIATED CIRCUITS OF CONCERN:

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FIRE AREA/ZONE 3-CO-15-1A

Location

Containment Building - El. 15'-0" - Generator Room #2 - 1335 square feet - Figs. 8-27, 8-28, 8-29, 8-30

Combustible Material	Quantity
Oil	2827 lbs
Plastic	17 lbs

Fire loading - 38,101 Btu/sq ft
Maximum permissible fire loading - 80,000 Btu/sq ft (Note 1)

Note 1: The maximum permissible fire loading is based on an evenly distributed loading of combustible materials.

Design Basis Fire

The design basis fire is postulated to be a fast burning fire that reaches a maximum temperature of 1575 °F and would involve oil normally contained within the two reactor coolant pumps located in the zone, or plastic.

Transient fire loads in this area are not credible when the plant is at power, and fixed hazards within containment which pose an exposure threat to equipment, components or circuits required for safe shutdown (i.e. reactor coolant pumps) are provided with fixed semi-automatic water suppression systems and automatic detection capability.

The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the zone.

Fire Protection Equipment

The zone contains a semi-automatic water spray system, with fixed temperature rate of rise detection, over the reactor coolant pumps. The heat detectors alarm in the control room. No hose stations or portable extinguishers are located within the zone. However, manual fire fighting equipment is available in adjacent zone 3-CO-15-1C.

Construction

The zone boundaries are heavy concrete with an approximate thickness of 48 inches. An open walkway allows access to the zone from adjacent zone 3-CO-15-1C. There are no fire dampers in the ventilation duct penetrations.

Safe Shutdown Equipment

Equipment Required for Hot Standby

RCS - Train A Cables

RCS - Train B Cable and Equipment

RCS - No Train Equipment

Equipment Required for Cold Shutdown

None

High/Low Pressure Interface Equipment

None

Spurious Operation Equipment

RCS - Train X Cables, Valves and Equipment

Alternative Shutdown Equipment

RCS - Train A and B Cables

Safety Related Equipment Not Required for Safe Shutdown

None

Technical Specification Barriers

For definition of the barriers requiring surveillance per Technical Specification 3.7.9, refer to Figures 8-27, 8-28, 8-29, and 8-30, sheet 3/4.

Consequences of Design Basis Fire

All manual operator actions required to achieve safe shutdown for a fire in this area/zone are performed outside the area/zone unless otherwise stated.

Effects of Fire on Hot Standby Capability

120 V

Due to inadequate breaker coordination, damage to cabling associated with the Train A and B 120VAC panels may result in loss of power to the panels. Operator action will be taken to strip affected loads and reclose supply breaker.

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-CO-15-1B

AREA: 1399 sq.ft. **DESCRIPTION:** GENERATOR ROOM #1

COMBUSTIBLES

Oil & Grease	2827 lbs.
Cable	0 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	17 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	36357.94 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.45 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	semi-automatic water spray for RC pumps
Hose Stations	none,(1)seismic available in 3-CO-15-1C
Portable Extinguishers	none, 10A:80B:C, 10B:C in 3-CO-15-1C
Detectors (type)	heat detectors for reactor coolant pumps

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1C
Doors	none

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant	N,A,B	A*,B*,A,B
Reactor Protection System		
Shutdown Cooling		
Chemical and Volume Ctrl		
Main Feedwater		
Main Steam		
HVAC		
Auxiliary Feedwater		
Engineered Safety Feature		
Component Cooling Water		
Saltwater Cooling Water		
Emergency Chilled Water		
Diesel Generator Systems		

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		
CCW (To SDC)		
HVAC		
SUMMARY	N,A,B	A*,B*,A,B

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		
480 V (AC)		
120 V (AC)		
125 V (DC)		
Electrical Panels		B
SUMMARY		B

ASSOCIATED CIRCUITS OF CONCERN:

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FPDS ver. 3.2

FIRE AREA/ZONE: 3-CO-15-1C
AREA: 11903 sq.ft. **DESCRIPTION:** CONTAINMENT AREA QUADRANTS 1,2,3,4

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	24839 lbs.
Class A	0 lbs.
Charcoal	5600 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	31641.41 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.40 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray sys for charcoal
Hose Stations	(9) seismic
Portable Extinguishers	(12)10A:80B:C, (12)10B:C
Detectors (type)	ionization(partial),temp.detector for char

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1D
Doors	(3)B/3-CO-15-167, (3)B/3-CO-15-168

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N		NOTE 1
Reactor Protection System			
Shutdown Cooling		B,A	B,A
Chemical and Volume Ctrl			A,B
Main Feedwater			
Main Steam			NOTE 2
HVAC			A,B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			
SUMMARY	N	B,A	NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			B
SUMMARY			B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,B*,C,D
NOTE 2 = A,A*,B,C,D

FPDS ver. 3.2 FIRE AREA/ZONE: 3-CO-63-1D

AREA: 14185 sq.ft. DESCRIPTION: OPERATING FLOOR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	33666 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	29073.89 BTU's/sq.ft.
Fire Loading - Max Permiss	80000 BTU's/sq.ft.
Fire Duration	0.36 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(3) seismic
Portable Extinguishers	(4)10A:80B:C, (4)10B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	OP/1C
Doors	B/3-CO-15-167, B/3-CO-15-168

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		B*,A,B,C
Reactor Protection System		
Shutdown Cooling	A,B	A,B
Chemical and Volume Ctrl		A,B
Main Feedwater		
Main Steam		A*,B,C
HVAC		
Auxiliary Feedwater	A,B	A,B
Engineered Safety Feature		
Component Cooling Water		
Saltwater Cooling Water		
Emergency Chilled Water		
Diesel Generator Systems		

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,B
CCW (To SDC)		
HVAC		
SUMMARY	A,B	A,B NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		
4160 V (AC)		
480 V (AC)		
120 V (AC)		
125 V (DC)		
Electrical Panels		B
SUMMARY		B

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,B*,C

FPDS ver. 3.2

FIRE AREA/ZONE: 3-PE-45-3A
DESCRIPTION: ELECTRICAL PENETRATION AREA

AREA: 6415 sq.ft.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	28472 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	54368.90 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	0.68 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(2) seismic
Portable Extinguishers	(6)10B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC/containment, 3hr/others
Floor, Ceiling, Roof	2hr
Penetrations	D, P, C, SG, QP/130
Fixed Openings	MH/3B
Doors	L/3-SE-50-146, A/3-AC-50-32, A/3-FH-45-130, A/3-FH-45-131

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	A*		A,B,D,A*
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Ctrl			A,B
Main Feedwater			
Main Steam	A*		A,B,D,A*
HVAC			A
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A,B,X
Saltwater Cooling Water			
Emergency Chilled Water			A
Diesel Generator Systems			A

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			
SUMMARY	A*		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			A
480 V (AC)	A*		A
120 V (AC)	A*,X*		A,B
125 V (DC)			
Electrical Panels	A*		NOTE 1
SUMMARY	A*,X*		NOTE 1

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,D,X

FPDS ver. 3.2 FIRE AREA/ZONE: 3-PE-63-3B

AREA: 6415 sq.ft. DESCRIPTION: ELECT. PEN. AREA/PERSONNEL MON. AREA

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	40654 lbs.
Class A	1040 lbs.
Charcoal	0 lbs.
Plastics	145 lbs.
Miscellaneous	202 lbs.

DESIGN BASIS FIRE

Fire Loading	79801.70 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(2) seismic
Portable Extinguishers	(5)10B:C
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC/containment, 2hr/178A, 3hr/others
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D, SG
Fixed Openings	MH/3A
Doors	A/3-AC-70-65, A/2-AR-63-116, (2) A/2-AR-68-178A A/3-FH-63-134, A/3-FH-17-123

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,B,C,B*
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Ctrl			A,B
Main Feedwater			
Main Steam			B,C
HVAC			B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			B
Saltwater Cooling Water			
Emergency Chilled Water			B
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			
SUMMARY			A,B,C,B*

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			B
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			NOTE 1
SUMMARY			NOTE 1, +

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : SEE TEXT

Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,B,B*,C,X

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-SE-(-5)-135A

AREA: 7285 sq.ft. **DESCRIPTION:** PIPING RM/HEAT EXCH RM.

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	51 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	25 lbs.
Miscellaneous	30 lbs.

DESIGN BASIS FIRE

Fire Loading	207.64 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none @ 5'-3", wet pipe system @ 8'-0
Hose Stations	(1) @ (-5'-3"), (1) @ 8'0"
Portable Extinguishers	(2) 10A:80B:C @(-5'3"),(2) 10A:80B:C @ 8'
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	HC/141, others 3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	P, C, D, NP/141, QP/136, QP/135B, QC/148G
Fixed Openings	MH/135B,135C,135D,2B
Doors	(2)W/3-TB-8-148G, W/3-TB-7-148A,W/3-SE-(-15)-136,W/3-SE-(-5)-135B,135C,135D

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water	N	A,B	A,B,b
Saltwater Cooling Water			A,B
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY	N	A,B	A,B,b

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			A,B
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			A,B
SUMMARY			A,B,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : SEE TEXT

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-SE-(-15)-136
AREA: 1860 sq.ft. **DESCRIPTION:** STAIRCASE / A/C ROOM

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	0 lbs.
Class A	61 lbs.
Charcoal	0 lbs.
Plastics	5 lbs.
Miscellaneous	8 lbs.

DESIGN BASIS FIRE

Fire Loading	372.15 BTU's/sq.ft.
Fire Loading - Max Permiss	13000 BTU's/sq.ft.
Fire Duration	0.00 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers @ el. 8'-0"
Hose Stations	(1) @ 8'-0"
Portable Extinguishers	(2) 10A:80B:C @ 8'-0"
Detectors (type)	ionization @ 8'-0"

FIRE RESISTANCE RATING

Walls	HC/2B, 138, 139, 140A, 140B, others 3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	P, D, C, NC/139, NP/SEE TEXT, QP/SEE TEXT
Fixed Openings	OP/2B, CH/137A,137B
Doors	W/137A,137B,137C,161B,138,139 W/140A,141,135A, (2)W/148A

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A,B
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			A,B

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling		A,B	A,B,b
CCW (To SDC)		A,B	A,B
HVAC			A,b
SUMMARY		A,B	A,B,b

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			+
125 V (DC)			
Electrical Panels			A,B,X
SUMMARY			A,B,X,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

FPDS ver. 3.2

FIRE AREA/ZONE: 3-SE-30-142A
AREA: 6634 sq.ft. **DESCRIPTION:** ELECTRICAL TUNNEL

COMBUSTIBLES

Oil & Grease	28 lbs.
Cable	74660 lbs.
Class A	0 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	0 lbs.

DESIGN BASIS FIRE

Fire Loading	137955.98 BTU's/sq.ft.
Fire Loading - Max Permiss	160000 BTU's/sq.ft.
Fire Duration	1.72 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	none, (1)in 3-AC-30-21, (1)in 2-AC-30-22
Portable Extinguishers	(5) 10A:80B:C, (1) 20B:C, (6) 10B:C
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	NR/142B, HC/146, 3hr others
Floor, Ceiling, Roof	2hr
Penetrations	C, P
Fixed Openings	louvers/exterior
Doors	A/3-AC-30-21, A/3-AC-70-65

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		
Reactor Protection System		
Shutdown Cooling		
Chemical and Volume Ctrl		
Main Feedwater		A,B
Main Steam		A,B,A*
HVAC		
Auxiliary Feedwater		A,a,B,C
Engineered Safety Feature		A,B,C
Component Cooling Water		A,a,B
Saltwater Cooling Water		a,B
Emergency Chilled Water		a,B
Diesel Generator Systems		B

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		A,a,B
CCW (To SDC)		B,A
HVAC		a,B
SUMMARY		NOTE 1

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		X
4160 V (AC)		B,A
480 V (AC)		B,A*
120 V (AC)		A*,+
125 V (DC)		
Electrical Panels		##,A*
SUMMARY		##,A*,+

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO
Spurious Operation : SEE TEXT

NOTES

NOTE 1 = A,A*,B,C,a

FPDS ver. 3.2 **FIRE AREA/ZONE:** 3-FH-17-123

AREA: 5717 sq.ft. **DESCRIPTION:** SPENT FUEL POOL/OPER. FLOOR

COMBUSTIBLES

Oil & Grease	0 lbs.
Cable	3 lbs.
Class A	600 lbs.
Charcoal	0 lbs.
Plastics	0 lbs.
Miscellaneous	250 lbs.

DESIGN BASIS FIRE

Fire Loading	1694.38 BTU's/sq.ft.
Fire Loading - Max Permiss	40000 BTU's/sq.ft.
Fire Duration	0.02 hrs.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(2) @ el. 63'-6"
Portable Extinguishers	(2) 10B:C
Detectors (type)	infrared

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	D, P, C, ND/exterior
Fixed Openings	(2)CH/174, (2)MH/174
Doors	A/3-PE-63-3B

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Ctrl			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
SUMMARY			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electrical Panels			B,X
SUMMARY			B,X

ASSOCIATED CIRCUITS OF CONCERN

H/L Pressure Interface : NO

Spurious Operation : NO

Requirements of Standard Review Plan BTP 9.5-1, Appendix A (1977) Plants Under Construction	Compliance/ Alternate Compliance	Basis For Acceptability	Specific Exceptions To Compliance	Compliance Statements From Original FHA And Responses To Selected NRC Questions
1. BUILDING DESIGN (cont)				
				instrumentation by means of transfer switches. Meters are provided on this panel to indicate steam generator pressure and level, pressurizer pressure and level, reactor coolant hot and cold leg temperatures. [Editorial Note: Cold leg temperature indication is not provided on the EPPM panel.]
b. In order to accomplish 1.a above, safety-related systems and fire hazards should be identified throughout the plant. Therefore, a detailed fire hazard analysis should be made. The fire hazards analysis should be reviewed and updated as necessary.	Comply	Meets Requirements	None	A fire hazards analysis has been performed and an additional specific fire hazard analysis will be performed for each plant modification.
Additional fire hazards analysis should be done after any plant modification.	Comply	Meets Requirements	None	
c. Alternative guidance for constructed plants is shown in Section F.3, "Cabling Spreading Room."	See Section F.3			See Section F.3.
d. Interior wall and structural components, thermal insulation materials and radiation shielding materials and sound-proofing should be non-combustible.	Comply with exception.	The use of fiberglass is minimized. The insulation will not significantly contribute to any fire.	Fiberglass used as a thermal insulation is combustible.	Interior wall and structural components and radiation shielding materials are non-combustible as required by Nuclear Mutual Limited (NML) - "Property Loss Prevention Standards for Nuclear Generating Stations."

Requirements of Standard Review Plan BTP 9.5-1, Appendix A (1977) Plants Under Construction	Compliance Alternate Compliance	Basis For Acceptability	Specific Exceptions To Compliance	Compliance Statements From Original FHA and Responses To Selected NRC Questions
1. BUILDING DESIGN (cont)				
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."	Comply with exception.	The use of vinyl flooring is limited.	The rating of the vinyl flooring exceeds the flame spread rating requirement.	The interior finishes are non-combustible as listed by Underwriters' Laboratory, Inc., or Factory Mutual for flame spread, smoke and fuel contribution of 25 or less in its final use configuration per ASTM E-84 Test - "Surface Burning Characteristics of Building Materials." Floor finishes are qualified to a No. 4 rating or less in the UL Test No. 992. Response to FQ015.3
		Both ASTM E-648 (NFPA 253) and ASTM E-662 (NFPA 258) together now represent fire testing methods more suitable for carpet. This criteria met by the Control Room carpet is recognized by the NML Property Loss Prevention Standards as providing an acceptable level of protection to ensure that non combustible materials are utilized and fire hazards associated with this type of "interior finish" are minimized. ASTM E-84 (flame spread rating) is no longer recognized by NML as an acceptable test standard for carpet. This is consistent with industry practice.	Control Room carpeting has a critical radiant flux as measured by ASTM E-648 (NFPA 253) greater than or equal to .45 watts/sq. cm (class 1 rating) and a smoke development rating of less than or equal to 200 as tested in ASTM E-662 (NPFA 258). The carpet was not tested to ASTM E-84.	The definitions of non-combustible and limited combustible have been revised to conform with NFPA 220. All wrap, insulation and interior finish, in areas containing safety-related equipment, comply with the NFPA 220 non-combustible or limited combustible criteria (with the exception of the vinyl-asbestos floor covering of the continuously manned control room space, which has a flame spread rating of 75 instead of 25). All vinyl-asbestos tiles used in the plant are rated according to the UL 992 test and have a rating of 4 or lower. The air conditioning water chillers have been factory insulated with Rubatex which

Requirements of Standard Review Plan BTP 9.5-1, Appendix A (1977) Plants Under Construction	Compliance/ Alternate Compliance	Basis For Acceptability	Specific Exceptions To Compliance	Compliance Statements From Original FHA and Responses To Selected NRC Questions
2. FIRE PROTECTION WATER SUPPLY SYSTEMS (cont)				
ments should be dedicated by means of a vertical standpipe for other water services.				are dedicated by means of a vertical standpipe for service water. The 3,000,000 gallon reservoir from San Onofre 1 can also be used to refill the San Onofre 2&3 fire water tanks through gravity flow.
e. The fire water supply (total capacity and flowrate) should be calculated on the basis of the largest expected flowrate for a period of 2 hours, but not less than 300,000 gallons. This flowrate should be based (conservatively) on 1,000 gpm for manual hose streams plus the greater of: (1) All sprinkler heads opened and flowing in the largest designed fire area; or (2) The largest open head deluge system operating.	Comply with exception.	The 750 gpm for manual hose streams is considered adequate.	The San Onofre fire water supply capacity is based upon 750 gpm in lieu of 1,000 gpm for manual hose streams.	e. The fire water supply (total capacity and flowrate) is calculated on the basis of the largest expected flowrate for a period of 2 hours but not less than 300,000 gallons. This flowrate is based (conservatively) on 750 gpm for manual hose streams plus the greater of: (1) All sprinkler heads opened and flowing in the largest designed fire area; or (2) The largest open head deluge system operating. San Onofre 2&3 rate is based on the 750 gpm for manual hose streams as recommended by NML, which is considered adequate.
f. Lakes or fresh water ponds of sufficient size may qualify as the sole source of water for fire protection, but require at least two intakes to the pump supply. When a common water supply is permitted for fire protection and the ultimate heat sink, the	Not Applicable	Not Applicable	Not Applicable	f. Since San Onofre 2&3 does not utilize lakes or fresh water ponds to provide water for fire protection, the applicable recommendations for such water sources do not apply.

Requirements of Standard Review Plan BTP 9.5-1, Appendix A (1977) Plants Under Construction	Compliance/ Alternate Compliance	Basis For Acceptability	Specific Exceptions To Compliance	Compliance Statements From Original FHA and Responses To Selected NRC Questions
3. WATER SPRINKLERS AND HOSE STANDPIPE SYSTEMS (cont)				
b. All valves in the fire water systems should be electrically supervised. The electrical supervision signal should indicate in the control room and other appropriate command locations in the plant (see NFPA 26, "Supervision of Valves"). When electrical supervision of fire protection valves is not practicable, an adequate management supervision program should be provided. Such a program should include locking valves open with strict key control; tamper proof seals; and periodic, visual check of all valves.	Comply	Meets Requirements	None	b. All valves in the fire water system are electrically supervised with the exception of the hose valves which are normally closed and the post indicator valves (PIV) and header isolation valves for Seismic Category I standpipes in the radwaste and control buildings that are normally locked open. The hose valves are not electrically supervised since their opening will result in the starting of the fire pumps due to system pressure drop and will also provide an indication in the control room. The electrical supervision signal provides an indication in the control room and that signal is retransmitted to the computer room (digital events recorder). NFPA No. 26, "Supervision of Valves" is utilized in this design.
c. Automatic sprinkler systems should as a minimum conform to requirements of appropriate standards such as NFPA 13, "Standard for the Installation of Sprinkler Systems," and NFPA 15 "Standard for Water Spray Fixed Systems."	Comply with exceptions.	The 200 psi hydrostatic test is considered adequate since it exceeds the fire pump operating pressure by 50 psi and the Jockey Pump operating pressure by 20 psi.	NFPA 13 (1975) Article No. 1-11.3.1 and NFPA 15 (1973) Article No. 5011: Hydrostatic test of systems was done at 200 psi rather than 230 psi as required.	c. Automatic sprinkler systems conform to requirements of appropriate NFPA Standards such as NFPA No. 13, "Standard for the Installation of Sprinkler Systems," and NFPA No. 15, "Standard for Water Spray Fixed Systems."