FPS **FIRE AREA/ZONE:** 3-AC-30-21

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

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	yes
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	X/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,B,C,D
Reactor Protection System			A,B,C,D
Shutdown Cooling			A,B
Chemical and Volume Control			A,B
Main Feedwater			A,B
Main Steam			A,B,C,D
HVAC			a*,A,B
Auxiliary Feedwater			a*,A,B,C
Engineered Safety Feature			A,B,C,D
Component Cooling Water			a*,A,B,X
Saltwater Cooling Water			a*,A,B
Emergency Chilled Water			a*,A,B
Diesel Generator Systems			A,B

COLD SHUTDOWN SYSTEMS	**Equipment**	**Valves**	**Cable**
Shutdown Cooling			a*,A,B
CCW (To SDC)			A,B
HVAC			a*,A,B
Summary (Hot and Cold)			a*,A,B,C,D,X

ESSENTIAL ELECTRIC SYSTEMS	**Equipment**	**MCC and Switchgear**	**Cable**
220 KV (AC)			X
4160 V (AC)			A,B
480 V (AC)			A,B
120 V (AC)			
125 V (DC)			
Electric Panels			A,B,C,D,X
Summary			A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-30-21

Location

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

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 are reinforced concrete with a 3 hour rating. The west half of the north wall is concrete, the east half 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 piping area (3-PE-30-2C) through a 3 hour rated door in the south wall. A 3 hour UL equivalent door communicates with the safety equipment building electrical tunnel (3-SE-30-142A). One 3 hour door separates the area from the control room (2-AC-30-20A). A 1 hour rated door separates the area from the corridor (2-AC-30-22). 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 (3-AC-9-7). Spring loaded check valves preclude the communication of fumes/air between this room and the lower riser gallery.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-6, sheet 3.

Cable for the following systems is wrapped:

HVAC - Train A
Shutdown Cooling System - Train A
Auxiliary Feedwater System - Train A
Component Cooling Water System - Train A
Saltwater Cooling System - Train A
Emergency Chilled Water System - Train A
Component Cooling Water Pump Room HVAC System - Train A

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment, or actuates the water spray system from the manual station located outside the cable riser gallery.

In the event the fire achieves sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the water spray system is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives and completes the extinguishment with portable equipment.

Should the automatic water spray system fail to actuate, the available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-30-21 and 2-AC-30-22, 3-AC-9-7 and 2-AC-9-8 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the fire area.

Fire Area 3-AC-30-21 Appendix R Compliance

Analysis for this fire area/zone has shown that equipment impaired may require control room evacuation in order to achieve safe shutdown. Shutdown for a fire in this area will be credited using alternative shutdown equipment and procedures. Operator action may be required to isolate selected Train A equipment from the control room and operate the equipment either manually or from alternative shutdown stations. Operator actions may be required to provide CCW make-up from the Fire Water System.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown due to alternative shutdown capabilities provided in accordance with 10CFR50, Appendix R, III.G.3 and III.L. Raceway fire barrier protection with suppression and detection is provided for required alternative shutdown cables. The fire detection and suppression systems in this area provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-30-22

AREA: 582 sq.ft. **DESCRIPTION:** CORRIDOR/STAIR

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	13,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(1)
Portable Extinguishers	yes
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 Control			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 (Hot and Cold)			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)			
Electric Panels	A/B		A,B,X
Summary	A/B		A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I 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

Fire Loading

Fire loading category - Minimal
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic and 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 1-1/2 hour door communicates to 2-AC-9-19.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-6, 8-7, and 8-8, sheet 3.

Conclusions

Airflow through train A and train B ductwork for the emergency chiller rooms will be cut off when the fire damper installed in the ductwork of each train operates. The emergency chiller room HVAC system is not required for safe shutdown. Adequate cooling is available to support emergency chiller operation during shutdown.

Portable smoke exhaust fans may be used in venting smoke from the area.

All the Appendix R fire area boundaries in 2-AC-30-22 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-30-22 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-30-23

AREA: 1059 sq.ft. **DESCRIPTION:** FAN ROOM

DESIGN BASIS FIRE

Fire Loading Category:	High
Fire Loading - Max Permiss	(SEE TEXT)

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray system for charcoal
Hose Stations	none,(1) in 2-AC-30-22
Portable Extinguishers	none, adjacent
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 Control			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 (Hot and Cold)	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)			
Electric Panels			A,B,X
Summary			A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-30-23

Location

Auxiliary Control Building - El. 30'-0" - Fan Room - 1059 square feet - Fig. 8-6

Fire Loading

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

Note 1: The maximum permissible fire loading is based on the reduced fuel contribution of the charcoal, which is entirely contained within the charcoal filters.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation and charcoal.

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

Fire Protection Equipment

A manual water spray system is provided for the charcoal filters. No hose stations or portable extinguishers are provided within the area. Manual fire fighting equipment is available in adjacent area 2-AC-30-22. A temperature detector is provided to alarm the charcoal filter high temperature condition in the control room. In addition, fixed temperature rate of rise heat detectors are provided over the charcoal filters. An ionization detector is provided for detection of fire in the remainder of the area. The heat detectors and the ionization detector provide early warning alarm in the control room.

Construction

The west wall of the area is reinforced concrete with a 3 hour rating. The south wall is also concrete, but with a 2 hour rating. The north and east walls are 2 hour rated metal framed plaster construction. The support column is protected by vermiculite fireproofing. The floor and ceiling are 2 hour rated. One 3 hour rated door communicates with the corridor (2-AC-30-22). All ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-6, sheet 3.

Conclusions

In the event of a fire in the charcoal filter, the temperature detectors installed within the charcoal filters are expected to alarm the high temperature condition into the control room. Fixed temperature thermal rate of rise heat detectors, installed locally over the charcoal filters, provide secondary control room alarm of a charcoal fire. Manual operation of the deluge valve by an operator in response to the high temperature alarm will provide water spray directly on the charcoal filters to extinguish the fire.

In the event of a fire outside of the charcoal filters, the ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt fire department response. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke from the area until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The majority of the fire load within the area is due to charcoal entirely contained within the filters of the emergency air conditioning units and does not pose a direct threat to the barriers defining the area. Additionally, heat detectors and a manual water spray system are provided. The design basis fire will not propagate beyond the boundaries defining the area.

Fire area boundaries in 2-AC-30-23 were evaluated with the exception of 2-TB-34-148D which is 3 hour rated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-30-23 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-30-24

AREA: 150 sq.ft. **DESCRIPTION:** STAIRCASE

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) adjacent zone each floor
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	C,P
Fixed Openings	none
Doors	B/2-AC-30-20E,B/2-AC-50-29,B/2-AC-70-64,A/2-AC-39-20D, L/exterior,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FPS **FIRE AREA/ZONE:** 2-AC-30-26

AREA: 1371 sq.ft. **DESCRIPTION:** FAN ROOM

DESIGN BASIS FIRE

Fire Loading Category:	High
Fire Loading - Max Permiss	(SEE TEXT)

FIRE PROTECTION (AVAILABLE)

Suppression (type)	man water spray for char.,area wetpipe sys
Hose Stations	none,(1)in 2-AC-30-27
Portable Extinguishers	none, adjacent
Detectors (type)	ionization,temp. det.& heat det. for char.

FIRE RESISTANCE RATING

Walls	west 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D,C,P
Fixed Openings	none
Doors	A/2-AC-30-27,,

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

COLD SHUTDOWN SYSTEMS	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	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)			
Electric Panels			A,B,X
Summary			A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-30-26

Location

Auxiliary Control Building - El. 30'-0" - Fan Room - 1371 square feet - Fig. 8-6

Fire Loading

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

Note 1: The maximum permissible fire loading is based on the reduced fuel contribution of the charcoal, which is entirely contained within the charcoal filters.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation and charcoal.

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

Fire Protection Equipment

A manual deluge system is provided for the charcoal filters. An automatic wet pipe sprinkler system is provided for protection of the remainder of the area. No hose stations or portable extinguishers are available within the area. Manual fire fighting equipment is available in adjacent area 2-AC-30-27. A temperature detector is provided to alarm charcoal filter high temperature condition in the control room. In addition, fixed temperature rate of rise heat detectors are installed over the charcoal filters. An ionization detector is provided for detector coverage of the remainder of the area. The heat detectors and the ionization detector provide early warning alarm in the control room.

Construction

The west wall of the area is reinforced concrete with a 3 hour rating. The north wall is also concrete but with a 2 hour rating. The south and east walls are 2 hour rated metal framed plaster construction. The support column is protected by vermiculite fireproofing. The floor and ceiling have a 2 hour rating. A 3 hour rated double door communicates with the corridor (area 2-AC-30-27). The ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. Ventilation duct penetrations in 3 hour rated walls are provided with 3 hour dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-6, sheet 3.

Conclusions

In the event of a fire in the charcoal filter, the temperature detectors installed within the charcoal filters are expected to alarm the high temperature condition in the control room. Fixed temperature rate of rise heat detectors, installed locally over the charcoal filters, provide secondary control room alarm of a charcoal fire. Manual operation of the deluge valve by an operator responding to the high temperature alarm will provide water spray directly on the charcoal filters to control and extinguish the fire.

In the event of a fire outside of the charcoal filters, the ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt fire department response. The fire department then enters the fan room and extinguishes the fire with portable equipment. The available portable equipment is adequate to extinguish the fire. Should the fire achieve sufficient intensity, the automatic wet pipe sprinklers are expected to actuate and extinguish the fire.

The normal ventilation system will effectively remove smoke from the area until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The majority of the fire load within the area is due to charcoal entirely contained within the filters of the emergency air conditioning units and does not pose a direct threat to the barriers defining the area. Additionally, heat detectors and a manual water spray system and a wet pipe sprinkler system are provided.

The fire boundaries between 2-AC-30-26 and 2-AC-30-27, 2-AC-30-20C and 2-AC-9-12 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-30-26 Appendix R Compliance

Analysis for this fire area/zone has shown that equipment impaired may require control room evacuation in order to achieve safe shutdown. Safe shutdown capability will be provided by utilizing alternative shutdown equipment and systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown due to alternative shutdown capabilities provided in accordance with 10CFR50, Appendix R, III.G.3 and III.L. The fire detection and suppression systems in this area provide a level of protection equivalent to the requirements of the applicable sections of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-30-27

AREA: 582 sq.ft. **DESCRIPTION:** CORRIDOR/STAIR

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	(1)
Portable Extinguishers	yes
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 Control		B
Main Feedwater		
Main Steam		
HVAC		A,B
Auxiliary Feedwater		
Engineered Safety Feature		
Component Cooling Water		
Saltwater Cooling Water		
Emergency Chilled Water		A,B
Diesel Generator Systems		

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		
CCW (To SDC)		
HVAC		
Summary (Hot and Cold)		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)		
Electric Panels	A/B	A,B,X
Summary	A/B	A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I 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

Fire Loading

Fire loading category - Minimal
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figures 8-6, 8-7, and 8-8, sheet 3.

Conclusions

Portable smoke exhaust fans may be effective in venting smoke from the area.

Appendix R fire area boundaries in 2-AC-30-27 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-30-27 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-30-28

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

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	yes
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	X/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,B,C,D
Reactor Protection System		A,B,C,D
Shutdown Cooling		A,B
Chemical and Volume Control		A,B
Main Feedwater		A,B
Main Steam		A,B,C,D
HVAC		a*,A,B
Auxiliary Feedwater		a*,A,B,C
Engineered Safety Feature		A,B,C,D
Component Cooling Water		a*,A,B,X
Saltwater Cooling Water		a*,A,B
Emergency Chilled Water		A,B
Diesel Generator Systems		A,B

COLD SHUTDOWN SYSTEMS

Equipment	Valves	Cable
Shutdown Cooling		a*,A,B
CCW (To SDC)		A,B
HVAC		a*,A,B
Summary (Hot and Cold)		a*,A,B,C,D,X

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		X
4160 V (AC)		A,B
480 V (AC)		A,B
120 V (AC)		
125 V (DC)		
Electric Panels		A,B,C,D,X
Summary		A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-30-28

Location

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

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 rated door. A 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.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-6, sheet 3/4.

Cable for the following systems is wrapped:

HVAC - Train A
Shutdown Cooling System - Train A
Auxiliary Feedwater System - Train A
Component Cooling Water System - Train A
Saltwater Cooling System - Train A

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment, or actuates the water spray system from the manual station located outside the cable riser gallery.

In the event the fire achieves sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the water spray system is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives and completes the extinguishment with portable equipment.

Should the automatic water spray system fail to actuate, the available portable extinguishers and hose stations are adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 2-AC-30-28 and 2-AC-30-27, 2-AC-9-14, 2-SE-30-142A and 2-AC-9-13 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-30-28 Appendix R Compliance

Analysis for this fire area/zone has shown that equipment impaired may require control room evacuation in order to achieve safe shutdown. Shutdown for a fire in this area will be credited using alternative shutdown equipment and procedures. Operator action may be required to isolate selected Train A equipment from the control room and operate the equipment either manually or from alternative shutdown stations. Operator actions may be required to provide CCW make-up from the Fire Water System.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown due to alternative shutdown capabilities provided in accordance with 10CFR50, Appendix R, III.G.3 and III.L. Raceway fire barrier protection with suppression and detection is provided for required alternative shutdown cables. The fire detection and suppression systems in this area provide a level of protection equivalent to the requirements of the applicable sections of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-50-29

AREA: 5991 sq.ft. **DESCRIPTION:** LOBBY / MOTOR CONTROL ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	(5)
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr/111B, 116, 148D, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P
Fixed Openings	none
Doors	see text

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	A,B		a,A,b,B,B*,C,D

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			A,B
480 V (AC)			A,B
120 V (AC)			A,B,C,D
125 V (DC)			A,B,C,D
Electric Panels			A,B,C,D,X
Summary			A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-29

Location

Auxiliary Control Building - El. 50'-0" - Lobby/Motor Control Room - 5991 square feet - Fig. 8-7

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation and paper (safe shutdown manuals and drawings).

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

Fire Protection Equipment

The area contains a wet pipe sprinkler system for area-wide suppression coverage. Manual fire fighting equipment is available within the area. Ionization smoke detectors, located in the area, provide early warning alarm in the control room.

Construction

The east and west walls of the corridor that are common with the building's perimeter walls are 3 hour fire rated. The rest of the walls are 2 hour fire rated, as are the floor and ceiling. The doors opening to the switchgear rooms (2-AC-50-35, 3-AC-50-34, 2-AC-50-40, 3-AC-50-60), the battery rooms (2-AC-50-42, 2-AC-50-48, 2-AC-50-49, 2-AC-50-50, 2-AC-50-51, 3-AC-50-61, 3-AC-50-52, 3-AC-50-53, 3-AC-50-54, and 3-AC-50-55), the distribution rooms (2-AC-50-44, 2-AC-50-45, 2-AC-50-46, 2-AC-50-47, 3-AC-50-56, 3-AC-50-57, 3-AC-50-58, 3-AC-50-59, 2-AC-50-41, 3-AC-50-62), to the HVAC rooms (2-AC-50-39 and 3-AC-50-30) and to the evacuation room (2-AC-50-43) are 3 hour fire rated. The doors separating the area from the cable riser galleries (2-AC-50-36 and 3-AC-50-33) and from the stairways (2-AC-30-22, 2-AC-30-24, and 2-AC-30-27) are 1-1/2 hour rated. The door to the elevator is 1-1/2 hour rated. Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. Ventilation duct penetrations in the 3 hour rated sections of the east and west walls are provided with 3 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following systems are wrapped:

HVAC - Train A
HVAC - Train B

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire, and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire. In the event the fire achieves sufficient intensity, the automatic wet pipe sprinkler system is expected to actuate and extinguish the fire.

The fire boundaries between 2-AC-50-29 and 3-AC-30-20B, 2-AC-9-18, 2-AC-30-20A, 3-AC-50-61, 2-AC-30-24, 2-AC-30-20C, 2-AC-30-20E, 2-AC-30-22, 2-AC-30-27, 2-AC-50-42, 3-AC-50-53, 3-AC-50-62, and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The suppression and detection provided and the heavy construction of barriers will adequately mitigate the consequences of fire and will confine it to the subject fire area.

Fire Area 2-AC-50-29 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or B systems. Safe shutdown analysis demonstrates that either Train A or Train B systems of both units may be damaged by fire, but due to physical separation at least one train for each unit will remain available. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, Sections III.G.1 and III.G.2.b and c. A deviation from the requirements of Section III.G.2 has been accepted to the extent it requires the separation of redundant safe shutdown cables and equipment by 20 feet free of intervening combustibles, and complete area-wide detection. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 3-AC-50-30

AREA: 288 sq.ft. **DESCRIPTION:** HVAC ROOM 3B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	heat detectors

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P,C,D
Fixed Openings	none
Doors	A/2-AC-50-29, A/3-AC-50-31

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			
HVAC	B		a,B
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 (Hot and Cold)	B		a,A,B

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-30

Location

Auxiliary Control Building - El. 50'-0" - HVAC Room 3B - 288 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 wet pipe sprinkler system. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One fixed temperature rate of rise heat detector, located within the area, provides early warning alarm in the control room.

Construction

The east wall is 3 hour fire rated thick concrete construction. The north, west, and south walls, as well as the floor and ceiling of the area, are 2 hour fire rated. A 3 hour rated door opens to HVAC Room 3A (3-AC-50-31). A second 3 hour rated door communicates with the corridor (2-AC-50-29). All ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation duct penetrations in 3 hour rated walls.

Licensee Controlled Specification Barriers

Cable for the following systems is wrapped:

4160V - Train A
Emergency Cooling Water - Train A
HVAC - Train A
Reactor Coolant System - Train A (SOE)
EP - Train A

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The fixed temperature rate of rise heat detector is expected to detect the fire in the first few minutes of the fire's growth period and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire. In the event the fire achieves sufficient intensity, the wet pipe sprinklers will actuate automatically to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-30 and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 3-AC-50-30 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Essential Train A cabling is wrapped to prevent damage. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 3-AC-50-31

AREA: 352 sq.ft. **DESCRIPTION:** HVAC ROOM 3A

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	none
Portable Extinguishers	none, adjacent
Detectors (type)	heat detector

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D,C,P
Fixed Openings	none
Doors	A/3-AC-50-30,B/3-AC-50-32

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			
HVAC	A		A,b,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 (Hot and Cold)	A		A,b,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)			
Electric Panels			A*,A,B,X
Summary			A*,A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-31

Location

Auxiliary Control Building - El. 50'-0" - HVAC Room 3A - 352 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 wet pipe sprinkler system. Manual fire fighting equipment is available in 2-AC-50-29 and 3-AC-50-32. One fixed temperature rate of rise heat detector, located within the area, provides early warning alarm in the control room.

Construction

The east wall is 3 hour fire rated thick concrete construction. The north, south, and west walls, as well as the ceiling and floor of the area, are 2 hour fire rated. A 3 hour rated door opens to HVAC room 3B (3-AC-50-30). A 1-1/2 hour fire rated door separates the area from the cable riser gallery (3-AC-50-32). All ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation duct penetrations in 3 hour rated walls.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following system is wrapped:

HVAC - Train B

Conclusions

The fixed temperature rate of rise heat detector is expected to detect the fire within the first few minutes of the fire's growth period and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire. In the event the fire reaches sufficient intensity, the automatic wet pipe sprinkler system will actuate and extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 3-AC-50-31 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas.

The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 3-AC-50-31 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 3-AC-50-32

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

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	yes
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			A,A*,B,b,C,D
Reactor Protection System			B,D
Shutdown Cooling			A,B
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			A,A*,b,B,C,D
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 (Hot and Cold)			A*,A,b,B,C,D,X

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			A,B
480 V (AC)			A
120 V (AC)			
125 V (DC)			
Electric Panels			A*,A,b,B,C,D,X
Summary			A*,A,b,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-32

Location

Auxiliary Control Building - El. 50'-0" - Cable Riser Gallery - 1458 square feet - Fig. 8-7

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 south and east walls of the area are 3 hour rated thick concrete construction. The north and west walls, as well as the floor and ceiling of the area, are 2 hour rated. A 3 hour rated door communicates with the cable riser gallery (3-AC-50-33). Two 1-1/2 hour rated doors separate the area from Switchgear Room 3A (3-AC-50-60). The area communicates with HVAC Room 3A (3-AC-50-31) through a 1-1/2 hour rated door. A 3 hour rated door opens to the stairway leading to the 45' elevation of the penetration building (3-PE-45-3A). Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation penetrations in 3 hour rated walls. Two drain lines discharge to the lower cable riser gallery (3-AC-9-7). Spring loaded check valves preclude the communication of fumes/air between this room and the lower riser gallery.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following systems is wrapped:

Reactor Coolant System - Train B
Main Steam System - Train B
HVAC - Train B
Electrical Panels - Train B

Conclusions

The ionization system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment or actuates the water spray system from the manual station located outside the cable riser gallery. In the event the fire achieves sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the water spray system is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives to complete the extinguishment with portable equipment.

Should the automatic water spray system fail to actuate, the portable equipment available in the area is adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-32 and 3-AC-50-62 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-32 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Safe shutdown analyses demonstrate that Train A systems may be damaged by a fire. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 3-AC-50-33

AREA: 795 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	none,(1) in 2-AC-50-29
Portable Extinguishers	yes
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	west and south exterior 3hr, other 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P, QP/7
Fixed Openings	none
Doors	A/3-AC-50-32,B/2-AC-50-29,B/3-AC-50-34

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			A,B
CCW (To SDC)			
HVAC			B
Summary (Hot and Cold)			a,A,B,B*,D

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-33

Location

Auxiliary Control Building - El. 50'-0" - Cable Riser Gallery - 795 square feet - Fig. 8-7

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 and in adjacent area 2-AC-50-29. One ionization smoke detector, located in the area, provides early warning alarm in the control room.

Construction

The west and south exterior walls of the area are 3 hour rated thick concrete construction. The interior walls, as well as the floor and ceiling, are 2 hour rated. One 3 hour rated door communicates with cable riser gallery 3-AC-50-32. The area is separated from the corridor (2-AC-50-29) and Switchgear Room 3B (3-AC-50-34) by 1-1/2 hour rated doors. Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation duct penetrations in 3 hour rated walls. Two drain lines discharge to the lower cable riser gallery (3-AC-9-7). Spring loaded check valves preclude the communication of fumes/air between this room and the lower riser gallery.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following system is wrapped:

Saltwater Cooling System: Train A

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment or manually actuates the water spray system from the manual station located outside the cable riser gallery. In the event the fire achieves sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the water spray system is alarmed in the control room. The water spray system will control and suppress the fire until the brigade arrives to complete the extinguishment with portable equipment.

Should the automatic water spray system fail to actuate, the available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-33 and 2-AC-30-22, 3-AC-50-62, and 2-AC-70-175 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-33 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Safe shutdown analysis demonstrates that Train B systems may be damaged by fire. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of the applicable sections of Appendix R.

FPS **FIRE AREA/ZONE:** 3-AC-50-34

AREA: 1544 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM 3B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr/west, 2hr others
Floor, Ceiling, Roof	2hr
Penetrations	C, D
Fixed Openings	none
Doors	B/3-AC-50-33, (2)A/2-AC-50-29

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	A/B*		A,B,B*
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			B
HVAC	B		B
Auxiliary Feedwater			B
Engineered Safety Feature			B
Component Cooling Water			A,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 (Hot and Cold)	A/B*,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
120 V (AC)	B		B,D
125 V (DC)			B,D
Electric Panels	B		A,B,X
Summary	B	B	A,B,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-34

Location

Auxiliary Control Building - El. 50'-0" - Switchgear Room 3B - 1544 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 and in adjacent area 2-AC-50-29. Ionization smoke detectors, located within the area, provide early warning alarm in the control room.

Construction

The west wall of the area is 3 hour rated thick concrete construction. The north, east, and south walls are 2 hour rated, as are the floor and ceiling. The area communicates with the corridor (2-AC-50-29) through two 3 hour rated doors. One 1-1/2 hour rated door separates the area from the cable riser gallery (3-AC-50-33). Support columns are protected by vermiculite fire-proofing. All ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detectors are expected to detect the products of combustion from an incipient fire and alert the control room for prompt action by the fire department. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

Air flow through Train A and Train B ductwork supporting the emergency chiller rooms will be cut off when the fire damper installed in the ductwork of each train operates.

The fire boundaries between 3-AC-50-34 and 2-AC-70-64, 2-AC-30-23, and 2-AC-30-22 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-34 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-35

AREA: 1544 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM 2B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	yes, adjacent
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	A/B*		B,B*
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			B
HVAC	B		B
Auxiliary Feedwater			B
Engineered Safety Feature			B
Component Cooling Water			A,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 (Hot and Cold)	A/B*,B		A,B,B*

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)		B	B
480 V (AC)	B	B	B
120 V (AC)	B		B,D
125 V (DC)			B,D
Electric Panels	B		A,B,X
Summary	B	B	A,B,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-35

Location

Auxiliary Control Building - El. 50'-0" - Switchgear Room 2B - 1544 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 in the area and in adjacent area 2-AC-50-29. Ionization smoke detectors, located within the area, provide early warning alarm in the control room.

Construction

The west wall of the area is 3 hour rated thick concrete construction. The north, east, and south walls are 2 hour rated, as are the floor and ceiling of the area. Two 3 hour rated doors communicate with the corridor (2-AC-50-29). A 1-1/2 hour rated door separates the area from the cable riser gallery (2-AC-50-36). Support columns are protected by vermiculite fireproofing. All ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detectors are expected to detect the products of combustion from an incipient fire and alert the control room for prompt action by the fire department. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 2-AC-50-35 and 2-AC-70-64 and 2-AC-30-27 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-35 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-36

AREA: 855 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	yes
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north to 2-SE-50-146 and west 3hr, and north/east to 2-AC-50-37 and others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D,C,P,QP/14
Fixed Openings	none
Doors	(2)A/2-AC-50-37,B/2-AC-50-35,,B/2-AC-50-29,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,B,B*,D
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			B,D
HVAC		A,B	a,A,B
Auxiliary Feedwater			B
Engineered Safety Feature			B,D
Component Cooling Water			A,B
Saltwater Cooling Water			a,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 (Hot and Cold)		A,B	a,A,B*,D

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-36

Location

Auxiliary Control Building - El. 50'-0" - Cable Riser Gallery - 855 square feet - Fig. 8-7

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 in the area and in adjacent area 2-AC-50-29. An ionization smoke detector, located in the area, provides early warning alarm in the control room.

Construction

The exterior walls of the area are 3 hour rated thick concrete construction. The interior walls, as well as the floor and ceiling, are 2 hour rated. Two 3 hour rated doors communicate with cable riser gallery 2-AC-50-37. The area is separated from the corridor (2-AC-50-29) and Switchgear Room 2B (2-AC-50-35) by 1-1/2 hour rated doors. Ventilation duct penetrations in 2 hour rated walls have 1-1/2 hour rated fire dampers. There are no ventilation duct penetrations in 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 this room and the lower riser gallery.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following systems is wrapped:

HVAC - Train A
Saltwater Cooling - Train A

Conclusions

The ionization system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment or actuates the water spray system from the manual station located outside the cable riser gallery. In the event the fire achieves sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the water spray system is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives to complete the extinguishment with portable equipment.

Should the automatic water spray system fail to actuate, the available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 2-AC-50-36 and 2-AC-50-27 and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-36 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Safe shutdown analysis demonstrates that all Train B systems may be damaged by fire. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of the applicable sections of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-50-37

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

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	yes
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		A,A*,b,B,C,D
Reactor Protection System		B,D
Shutdown Cooling		A,B
Chemical and Volume Control		A,b,B
Main Feedwater		
Main Steam		A,A*,b,B,C,D
HVAC		A,b,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 (Hot and Cold)		A,A*,b,B,C,D,X

ESSENTIAL ELECTRIC SYSTEMS

Equipment	MCC and Switchgear	Cable
220 KV (AC)		X
4160 V (AC)		A,B
480 V (AC)		A
120 V (AC)		
125 V (DC)		
Electric Panels		A,B,C,D,X
Summary		A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-37

Location

Auxiliary Control Building - El. 50'-0" - Cable Riser Gallery - 1566 square feet - Fig. 8-7

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 within the area, provide early warning alarm in the control room.

Construction

The north and east walls of the area are 3 hour rated thick concrete construction. The south and west walls, as well as the floor and ceiling of the area, are 2 hour rated. Two 3 hour rated doors communicate with cable riser gallery 2-AC-50-36. Two 1-1/2 hour rated doors separate the area from switchgear room 2A (2-AC-50-40). The area communicates with HVAC Room 2A (2-AC-50-38) through a 1-1/2 hour rated door. A 3 hour rated door opens to the stairway leading to the 45' elevation of the penetration building (2-PE-45-3A). Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation penetrations in 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 the room and the lower riser gallery.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following systems is wrapped:

Chemical and Volume Control System - Train B
Reactor Coolant System - Train B
Main Steam System - Train B
HVAC - Train B
Emergency Chilled Water - Train B
Auxiliary Feedwater - Train B

Conclusions

The ionization system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment or actuates the water spray system from the manual station located outside the cable riser gallery. In the event the fire achieves sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the water spray system is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives to complete the extinguishment with portable equipment.

Should the automatic water spray system fail to actuate, the available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 2-AC-50-37 and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to propagate beyond the boundaries defining the fire area.

Fire Area 2-AC-50-37 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Safe shutdown analyses demonstrate that Train A systems may be damaged by a fire. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-50-38

AREA: 352 sq.ft. **DESCRIPTION:** HVAC RM. 2A

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	none
Portable Extinguishers	none, adjacent
Detectors (type)	heat detector

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P
Fixed Openings	none
Doors	A/2-AC-50-39, B/2-AC-50-37,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			
HVAC	A		A,b,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 (Hot and Cold)	A		A,b,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)			
Electric Panels			A*,B,X
Summary			A*,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/l Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-38

Location

Auxiliary Control Building - El. 50'-0" - HVAC Room 2A - 352 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 wet pipe sprinkler system. Manual fire fighting equipment is available in the area and in adjacent area 2-AC-50-37. One fixed temperature rate of rise heat detector, located within the area, provides early warning alarm in the control room.

Construction

The east wall is 3 hour rated thick concrete construction. The north, south, and west walls, as well as the floor and ceiling of the area, are 2 hour rated. A 3 hour rated door opens to HVAC Room 2B (2-AC-50-39). A 1-1/2 hour rated door separates the area from the cable riser gallery (2-AC-50-37). Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation duct penetrations in 3 hour rated walls.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cable for the following system is wrapped:

HVAC - Train B

Conclusions

The fixed temperature rate of rise detector is expected to detect the fire in the first few minutes of the fire's growth period and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire. In the event the fire reaches sufficient intensity, the automatic wet pipe sprinkler system will actuate and extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-38 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-38 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-50-39

AREA: 288 sq.ft. **DESCRIPTION:** HVAC ROOM 2B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers
Hose Stations	none,(1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	heat detector

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P
Fixed Openings	none
Doors	A/2-AC-50-38, A/2-AC-50-29,,

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	B		a,A,B

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-39

Location

Auxiliary Control Building - El. 50'-0" - HVAC Room 2B - 288 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 wet pipe sprinkler system. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One fixed temperature rate of rise heat detector, located within the area, provides early warning alarm in the control room.

Construction

The east wall is 3 hour rated thick concrete construction. The north, south, and west walls, as well as the ceiling and floor of the area, are 2 hour rated. One 3 hour rated door opens to HVAC Room 2A (2-AC-50-38). A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. There are no ventilation duct penetrations in 3 hour rated walls.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Cables for the the following systems are wrapped:

4160V - Train A
ECW - Train A
EP - Train A
HVAC - Train A
RCS - Train A (SOE)

Conclusions

The fixed temperature rate of rise heat detector is expected to detect the fire in the first few minutes of the fire's growth period and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire. In the event the fire achieves sufficient intensity, the wet pipe sprinklers will actuate automatically to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-39 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-39 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Essential Train A cabling is wrapped with a one hour rated fire barrier to prevent damage. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.c. The fire detection and suppression systems in this area/zone were evaluated and shown to provide a level of protection equivalent to the requirements of the applicable sections of Appendix R.

FPS **FIRE AREA/ZONE:** 2-AC-50-40

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

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	yes, adjacent
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/B*,X*		A,C,B,B*
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Control			A,B
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 (Hot and Cold)	A,A/B*,X*		A,B,B*,C

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)		A	A
480 V (AC)	A	A	A
120 V (AC)	A		A,C
125 V (DC)			A,C
Electric Panels	A		A,A*,B,C,X
Summary	A	A	A,A*,B,C,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-40

Location

Auxiliary Control Building - El. 50'-0" - Switchgear Room 2A - 1900 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation and plastic.

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 and in adjacent area 2-AC-50-29. Ionization smoke detectors, located within the area, provide early warning alarm in the control room.

Construction

The barriers defining the area are 2 hour rated, as are the floor and ceiling. Two 1-1/2 hour rated doors communicate with the cable riser gallery (2-AC-50-37). A 3 hour rated door separates the area from the corridor (2-AC-50-29). A 1-1/2 hour rated panel, located in the southwest corner of the west wall, leads to an emergency shower in Battery Room 306A (2-AC-50-42). Support columns are protected by vermiculite fireproofing. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

Ionization detectors are provided and are expected to detect the products of combustion from an incipient fire and alert the control room for prompt action by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 2-AC-50-40 and 2-AC-50-42, 2-AC-30-20C, and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-40 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-41

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

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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 Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-41

Location

Auxiliary Control Building - El. 50' - 0" - Distribution Room
242 square feet

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

Portable extinguishers and hose stations are available in area 2-AC-50-29. An ionization detector, located in the area, provides early warning alarm in the control room.

Construction

The walls, ceiling and floor of this area are 2 hour rated. A 3 hour rated door communicates with area 2-AC-50-29. Ventilation duct penetrations are provided with 1-1/2 hour rated dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, Sheet 3.

Conclusions

The ionization detector is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department.

The fire boundaries between 2-AC-50-41 and 2-AC-50-42, 2-AC-30-27, 2-AC-70-64, and 2-AC-30-20C were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas.

The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-50-41 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-42

AREA: 315 sq.ft. **DESCRIPTION:** BATTERY ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

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 Control			
Main Feedwater			
Main Steam			
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			
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	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)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-50-42

Location

Auxiliary Control Building - El. 50'-0" - Battery Room - 315 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastics.

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

Fire Protection Equipment

Ionization detection and hydrogen sensing exists in the area which provide early warning alarm in the Control Room. There is no suppression in the area, but there is manual fire fighting equipment in adjacent area 2-AC-50-29. These fire fighting and detection features will adequately mitigate the consequences of fire.

Construction

The walls, floor, and ceiling defining the area are 2 hour rated. A 3 hour fire rated door communicates with area 2-AC-50-29. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. Manual suppression equipment is available in the adjacent area 2-AC-50-29. These fire protection features will adequately mitigate the consequences of the fire and confine it to the subject fire area.

Fire area boundaries in 2-AC-50-42 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-50-42 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-43

AREA: 297 sq.ft. **DESCRIPTION:** EVACUATION ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

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

COLD SHUTDOWN SYSTEMS	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	B,C,D,B*		A,B,B*,C,D

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels	A*,B*,C*,D*		A,B,C,D,X
Summary	A*,B*,C*,D*		A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-43

Location

Auxiliary Control Building - El. 50'-0" - Evacuation Room - 297 square feet - Fig. 8-7

Fire Loading

Fire loading category - Minimal
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 Class A combustible materials.

Design Basis Fire

The design basis fire is postulated to be a slow burning fire that would involve mostly Class A combustibles.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The barriers defining the area are 2 hour rated, as are the floor and ceiling. Two 3 hour rated doors communicate with the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire. The design basis fire is insufficient to breach the barriers defining the area.

The fire boundaries between 2-AC-50-43 and 2-AC-70-64, and 2-AC-30-20E were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-50-43 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-44

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 2B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			B
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	B		B

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			B
480 V (AC)			B
120 V (AC)	B		B,D
125 V (DC)	B		B,D
Electric Panels			B
Summary	B		B,D

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-44

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 2B - 252 square feet - Fig 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floors and ceilings. The support column is protected by vermiculite fireproofing. One 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

Ionization detectors are provided and are expected to detect products of combustion from an incipient fire and alert the control room for prompt response by the fire department. Portable suppression equipment is available and is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-44 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-44 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-45

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 2D

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS	Equipment	Valves	Cable
Reactor Coolant			D
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			D
HVAC	B		
Auxiliary Feedwater			
Engineered Safety Feature			D
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 (Hot and Cold)	B		D

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)	D		
120 V (AC)	D		D
125 V (DC)	D		D
Electric Panels			D
Summary	D		D

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-45

Location

Auxiliary Control building - El. 50'-0" - Distribution Room 2D - 252 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door opens to the corridor (2-AC-50-29). The support column is protected by a vermiculite fireproofing. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-45 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire area. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-45 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-46

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 2C

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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			C
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			C
HVAC	A		
Auxiliary Feedwater			
Engineered Safety Feature			C
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 (Hot and Cold)	A		C

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)	C		
120 V (AC)	C		C
125 V (DC)	C		C
Electric Panels			C
Summary	C		C

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-50-46

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 2C - 252 square feet - Fig 8-7

Combustible Material	Quantity
Cable insulation	310 lbs

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-46 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-46 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-47

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 2A

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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			A
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			A
HVAC	A		A
Auxiliary Feedwater			A
Engineered Safety Feature			A
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS	Equipment	Valves	Cable
Shutdown Cooling			A
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	A		A

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			A
480 V (AC)			A
120 V (AC)	A		A,C
125 V (DC)	A		A,C
Electric Panels			A
Summary	A		A,C

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-50-47

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 2A - 252 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-47 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-47 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-48

AREA: 173 sq.ft. **DESCRIPTION:** BATTERY ROOM 2A

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

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 Control			
Main Feedwater			
Main Steam			
HVAC			A
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 (Hot and Cold)			A

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			A
120 V (AC)			
125 V (DC)	A		A
Electric Panels			A
Summary	A		A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-50-48

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 2A - 173 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 2-AC-50-48 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-48 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-49

AREA: 219 sq.ft. **DESCRIPTION:** BATTERY ROOM 2C

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	D,C
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 Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)	C		C
Electric Panels			A
Summary	C		A,C

ASSOCIATED CIRCUITS OF CONCERN

H/l Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-50-49

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 2C - 219 square feet -Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The north, south, east, and west walls are 2 hour rated, as are the floor and ceiling. A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

FIRE AREA/ZONE 2-AC-50-49

The fire boundary between 2-AC-50-49 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-49 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-50-50

AREA: 219 sq.ft. **DESCRIPTION:** BATTERY ROOM 2D

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

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 Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS	**Equipment**	**MCC and Switchgear**	**Cable**
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)	D		D
Electric Panels			B
Summary	D		B,D

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-50-50

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 2D - 219 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door opens to the corridor (2-AC-50-29). The support column in the north wall is protected by vermiculite fireproofing. A 3 hour rated door communicates with the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

FIRE AREA/ZONE 2-AC-50-50

The fire boundary between 2-AC-50-50 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-50 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS

FIRE AREA/ZONE: 2-AC-50-51

AREA: 173 sq.ft. **DESCRIPTION:** BATTERY ROOM 2B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

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 Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-50-51

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 2B - 173 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The north, south, east, and west walls are 2 hour rated, as are the floor and ceiling. A 3 hour rated door communicates with the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

FIRE AREA/ZONE 2-AC-50-51

The fire boundaries between 2-AC-50-51 and 2-AC-70-64, and 2-AC-30-20E were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 2-AC-50-51 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-52

AREA: 173 sq.ft. **DESCRIPTION:** BATTERY ROOM 3B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			D
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			D
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 (Hot and Cold)			D

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AC-50-52

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 3B - 173 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The north, south, east, and west walls are 2 hour rated, as are the floor and ceiling. A 3 hour rated door communicates with the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-52 and 2-AC-50-53, 2-AC-9-18, and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-52 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-53

AREA: 219 sq.ft. **DESCRIPTION:** BATTERY ROOM 3D

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,B,C
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			C
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 (Hot and Cold)			A,B,C

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)	D		D
Electric Panels			B
Summary	D		B,D

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-53

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 3D - 219 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door opens to the corridor (2-AC-50-29). The support column is protected by vermiculite fireproofing. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

Fire area boundaries in 3-AC-50-53 were evaluated. The fire area boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-53 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-54

AREA: 219 sq.ft. **DESCRIPTION:** BATTERY ROOM 3C

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C
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 Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)	C		C
Electric Panels			A
Summary	C		A,C

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	NO

FIRE AREA/ZONE 3-AC-50-54

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 3C - 219 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door communicates with the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-54 and 2-AC-70-64 and 3-AC-50-53 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-54 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-55

AREA: 173 sq.ft. **DESCRIPTION:** BATTERY ROOM 3A

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

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			A
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Control			
Main Feedwater			
Main Steam			A
HVAC			A
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 (Hot and Cold)			A

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			A
120 V (AC)			
125 V (DC)	A		A
Electric Panels			A
Summary	A		A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-55

Location

Auxiliary Control Building - El. 50'-0" - Battery Room 3A - 173 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastic battery cases and rubber mats.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector and a hydrogen sensor, located within the area, provide early warning alarm in the control room.

Construction

The north, south, east, and west walls are 2 hour rated, as are the floor and ceiling. A 3 hour rated door communicates with the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 3-AC-50-55 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-55 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-56

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 3A

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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			A
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Control			
Main Feedwater			
Main Steam			A
HVAC	A		A
Auxiliary Feedwater			A
Engineered Safety Feature			A
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			A
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS	**Equipment**	**Valves**	**Cable**
Shutdown Cooling			A
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	A		A

ESSENTIAL ELECTRIC SYSTEMS	**Equipment**	**MCC and Switchgear**	**Cable**
220 KV (AC)			
4160 V (AC)			A
480 V (AC)			A
120 V (AC)	A		A,C
125 V (DC)	A		A,C
Electric Panels			A
Summary	A		A,C

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-56

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 3A - 252 square feet - Fig. 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The wall defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room. The available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

FIRE AREA/ZONE 3-AC-50-56

The fire boundary between 3-AC-50-56 and 3-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-56 Appendix R Compliance

Safe shutdown capability will be provided utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-57

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 3C

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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			C
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			C
HVAC	A		
Auxiliary Feedwater			
Engineered Safety Feature			C
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 (Hot and Cold)	A		C

ESSENTIAL ELECTRIC SYSTEMS	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)	C		
120 V (AC)	C		C
125 V (DC)	C		C
Electric Panels			C
Summary	C		C

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	NO

FIRE AREA/ZONE 3-AC-50-57

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 3C - 252 square feet - Figure 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundary between 3-AC-50-57 and 2-AC-70-64 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-57 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-58

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 3D

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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			A,B,C,D
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			C,D
HVAC	B		
Auxiliary Feedwater			
Engineered Safety Feature			D
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 (Hot and Cold)	B		A,B,C,D

ESSENTIAL ELECTRIC SYSTEMS	**Equipment**	**MCC and Switchgear**	**Cable**
220 KV (AC)			
4160 V (AC)			
480 V (AC)	D		
120 V (AC)	D		D
125 V (DC)	D		D
Electric Panels			D
Summary	D		D

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-58

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 3D - 252 square feet - Figure 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floor and ceiling. A 3 hour rated door opens to the corridor (2-AC-50-29). The support column is protected by vermiculite fireproofing. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-58 and 3-AC-50-53, and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-58 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-59

AREA: 252 sq.ft. **DESCRIPTION:** DISTRIBUTION ROOM 3B

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
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			B,D
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			B,D
HVAC	B		
Auxiliary Feedwater			B
Engineered Safety Feature			B
Component Cooling Water			
Saltwater Cooling Water			
Emergency Chilled Water			
Diesel Generator Systems			

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			B
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	B		B,D

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			B
480 V (AC)			B
120 V (AC)	B		B,D
125 V (DC)	B		B,D
Electric Panels			B,D
Summary	B		B,D

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-59

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room 3B - 252 square feet - Figure 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The walls defining the area are 2 hour rated, as are the floors and ceilings. The support column is protected by vermiculite fireproofing. One 3 hour rated door separates the area from the corridor (2-AC-50-29). Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

Ionization detectors are provided and are expected to detect products of combustion from an incipient fire and alert the control room for prompt response by the fire department. Portable suppression equipment is available and is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-59 and 3-AC-50-53, 2-AC-30-24 and 2-AC-70-64 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-59 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-60

AREA: 1900 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM 3A

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	yes, adjacent
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/B*,X*		A,B,B*,C
Reactor Protection System			
Shutdown Cooling			A
Chemical and Volume Control			A,B
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 (Hot and Cold)	A,A/B*,X*		A,B,B*,C

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-60

Location

Auxiliary Control Building - El. 50'-0" - Switchgear Room 3A - 1900 square feet - Figure 8-7

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 and in adjacent area 2-AC-50-29. Ionization smoke detectors, located within the area, provide early warning alarm in the control room.

Construction

The barriers defining the area are 2 hour rated, as are the floor and ceiling. Two 1-1/2 hour rated doors separate the area from the cable riser gallery (3-AC-50-32). A 3 hour rated door communicates with the corridor (2-AC-50-29). A 1-1/2 hour rated panel, located in the northwest corner of the west wall, leads to an emergency shower in Battery Room 306K (3-AC-50-61). Support columns are protected by vermiculite fireproofing. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

Ionization detectors are provided and are expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available portable suppression equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-50-60 and 3-AC-50-61, 3-AC-50-62, 2-AC-70-64, and 2-AC-30-20B were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the area.

Fire Area 3-AC-50-60 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-61

AREA: 315 sq.ft. **DESCRIPTION:** BATTERY ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, hydrogen sensor

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 Control			
Main Feedwater			
Main Steam			
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			
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	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)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-61

Location

Auxiliary Control Building - El. 50'-0" - Battery Room
315 square feet - Figure 8-7

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly plastics and rubber mats.

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

Fire Protection Equipment

Manual fire fighting equipment is available in adjacent area 2-AC-50-29. Ionization detector and hydrogen sensing located in the area provide early warning alarm in the Control Room.

Construction

The floor, ceiling, and walls of the area are 2 hour rated. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers. A 3 hour rated door communicates with area 2-AC-50-29.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 4.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. Manual suppression equipment is available in the adjacent area 2-AC-50-29. These fire protection features will adequately mitigate the consequences of the fire and confine it to the subject fire area.

All fire area boundaries in 3-AC-50-61 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 3-AC-50-61 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-50-62

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

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AC-50-29
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			D
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			D
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			D
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 (Hot and Cold)			D

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-50-62

Location

Auxiliary Control Building - El. 50'-0" - Distribution Room
242 square feet

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation.

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

Fire Protection Equipment

The zone contains no fire suppression equipment, either fixed or portable. Manual fire fighting equipment is available in adjacent area 2-AC-50-29. Ionization detectors are located in the zone to provide early warning alarm to the control room.

Construction

The walls, the floor and ceiling are 2 hour rated. The zone contains a 3 hour rated door and 1-1/2 rated dampers, cabling and piping penetrations communicating with adjacent areas.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-7, sheet 3.

Conclusions

The ionization detectors are expected to detect the products of combustion from an incipient fire and alert the control room for prompt action by the fire department. The fire department will use the hose station and portable equipment from the adjacent zone to extinguish the fire.

The normal ventilation system will effectively remove smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

FIRE AREA/ZONE 3-AC-50-62

Fire area boundaries in 3-AC-50-62 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire area boundaries.

Fire Area 3-AC-50-62 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-70-63

AREA: 1560 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	yes
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north and east 3hr, others 2hr
Floor, Ceiling, Roof	2hr/floor, 70 HC/roof
Penetrations	D, C, P, ND/roof
Fixed Openings	none
Doors	A/2-PE-63-3B, A/2-SE-30-142A,,B/2-AC-70-64,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			A,B,B*,C
Reactor Protection System			
Shutdown Cooling			B
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			B,C
HVAC			B
Auxiliary Feedwater			B
Engineered Safety Feature			
Component Cooling Water			A,B,X
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 (Hot and Cold)			A,B,B*,C,X

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)			
Electric Panels			A,B,C,X
Summary			A,B,C,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-70-63

Location

Auxiliary Control Building - El. 70'-0" - Cable Riser Gallery - 1560 square feet - Figure 8-8

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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. In addition, manual fire fighting equipment is available within the area. Ionization smoke detectors, located within the area, provide early warning alarm in the control room.

Construction

The north and east walls of the area are 3 hour rated thick concrete construction. The south and west walls are 2 hour rated, as are the floor and ceiling except the portion to the roof which is nonrated heavy concrete. A 1-1/2 hour rated door opens to the corridor (2-AC-70-64). The area communicates with the penetration building (2-PE-63-3B) and the safety equipment building (2-SE-30-142A) through 3 hour rated doors. The ventilation duct penetrations in 2 hour rated walls have 1-1/2 hour rated fire dampers. Ventilation duct penetrations in 3 hour rated walls are provided with 3 hour rated fire dampers. The ventilation duct to the roof has no damper.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-8, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment, or actuates the water spray system from the manual station located outside the cable riser gallery.

In the event the fire reaches sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the heat detectors is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives and completes the extinguishment with portable equipment.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 2-AC-70-63 and 2-AC-70-64, 2-AC-30-27, and 2-AC-85-70 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the fire area.

Fire Area 3-AC-70-63 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Safe shutdown analysis demonstrates that Train B systems may be damaged by fire. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-70-64

AREA: 17323 sq.ft. **DESCRIPTION:** HEALTH PHYSICS AND ACCESS CONTROL AREA

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers locally
Hose Stations	(5)
Portable Extinguishers	yes
Detectors (type)	local ionization, photoelectric, heat

FIRE RESISTANCE RATING

Walls	ext. 3hr, NR to ext. north side, int.2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, D, P, MH(B)/66,67,68,69
Fixed Openings	LV/ext.
Doors	see text,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			A
Summary			A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AC-70-64

Location

Auxiliary Control Building - El. 70'-0" - Health Physics and Access Control Area - 17323 square feet - Figure 8-8

Fire Loading

Fire loading category - Low (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: Flammable liquids within the area are stored in metal cabinets of equivalent construction to 1 hour rated cabinets.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly Class A combustibles, rubber, plastic, acetylene and cable insulation.

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

Fire Protection Equipment

A local wet pipe sprinkler system is also located in the corridor area to provide additional protection from exposure fires. Manual fire fighting equipment is available within the area. In addition, a total flooding halon system actuated by ionization and photoelectric smoke detectors is provided for the protection of the radiochemistry counting room. Ionization smoke detectors are located above the false ceiling (within the concealed space) in the vicinity of the safety related cabling and ductwork (northwest section of the corridor). Fixed rate of rise heat detectors and ionization smoke detectors are also provided for local coverage of other hazard areas within the area. Detectors provide early warning alarm in the control room.

Construction

The walls separating the area from the adjacent stairwells (2-AC-30-27, 2-AC-30-24, and 2-AC-30-22), the duct shafts (2-AC-70-69, 2-AC-70-68, 2-AC-70-67 and 2-AC-70-66), the cable riser galleries (2-AC-70-63 and 3-AC-70-65), and the telecommunications center (2-AC-70-175) are 2 hour rated. The floor and roof of the area are also 2 hour rated. The exterior area walls are 3 hour rated except on the north side where louvers are located in the wall of the Operation Support Center. Four 1-1/2 hour rated doors open to the stairwells (2-AC-30-22, 2-AC-30-27, 2-AC-30-24), and cable riser gallery (2-AC-70-63). A nonrated door communicates with the turbine building (2-TB-72-154B). The elevator door is 1-1/2 hour rated. The remainder of the doors from the area are 3 hour rated.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-8, sheet 3.

Conclusions

Safety related cabling and ductwork for the battery room exhaust fans is routed in conduit above the ceiling. Wet pipe sprinklers, installed above and below the ceiling, and local ionization detectors above the ceilings are provided to protect the safety related system cable from possible exposure hazards. Loss of the battery room exhaust fan cabling is not expected. Loss of airflow through redundant battery room exhaust systems ductwork is expected when the design basis fire causes the fire dampers to operate. The system is not required for safe shutdown.

Components located in the Radiation Chemical Lab are designed for collecting samples and testing for radioactivity. The sampling system is normally closed and may be isolated by valves located outside the lab.

Normal ventilation systems or portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

Appendix R fire area boundaries in 2-AC-70-64 were evaluated, with the exception of the barriers to 2-SE-70-172 and 2-AR-63-116 which are 3 hour rated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between fire area. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 3-AC-70-64 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 3-AC-70-65

AREA: 1850 sq.ft. **DESCRIPTION:** CABLE RISER GALLERY

DESIGN BASIS FIRE

Fire Loading Category:	Medium
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray system
Hose Stations	(1)
Portable Extinguishers	yes
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north and west 2hr, others 3hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P
Fixed Openings	none
Doors	A/3-PE-63-3B, A/2-AC-70-64,,A/3-SE-30-142A, B/2-AC-70-175

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		A,B,B*,C
Reactor Protection System		
Shutdown Cooling		B
Chemical and Volume Control		A,B
Main Feedwater		
Main Steam		B,C
HVAC		B
Auxiliary Feedwater		B
Engineered Safety Feature		
Component Cooling Water		A,B,X
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 (Hot and Cold)		A,B,B*,C,X

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)		
Electric Panels		B,C,X
Summary		B,C,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-AC-70-65

Location

Auxiliary Control Building - El. 70'-0" - Cable Riser Gallery - 1850 square feet - Figure 8-8

Fire Loading

Fire loading category - Medium
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 south and east walls of the area are 3 hour rated thick concrete construction. The north and west walls are 2 hour rated, as are the floor and ceiling. The area communicates with the corridor (2-AC-70-64), the penetration building (3-PE-63-3B), and the safety equipment building (3-SE-30-142A) through 3 hour rated doors. A 1-1/2 hour rated door separates the area from the telecommunications center (2-AC-70-175). Ventilation duct penetrations in 2 hour rated walls are provided with 1-1/2 hour rated fire dampers. Ventilation duct penetrations in 3 hour rated walls are provided with 3 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-8, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The fire department then enters the cable riser gallery and extinguishes the fire with portable equipment, or actuates the water spray system from the manual station located outside the cable riser gallery. In the event the fire reaches sufficient intensity, the fixed temperature rate of rise heat detectors will actuate the water spray system automatically. Actuation of the heat detectors is alarmed in the control room. The water spray system will control and suppress the fire until the fire department arrives and completes the extinguishment with portable equipment. Should the water spray system fail to actuate, the available portable equipment is adequate to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire until the fire dampers operate. Portable smoke exhaust fans may then be used to vent smoke from the area.

The fire boundaries between 3-AC-70-65 and 2-AC-70-64, 2-AC-30-22, 2-AC-70-175, 2-AC-85-180 and 2-AC-85-71 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 3-AC-70-65 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A systems. Safe shutdown analysis demonstrates that the Train B systems may be damaged by fire. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-70-66

AREA: 40 sq.ft. **DESCRIPTION:** HVAC DUCT SHAFT

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr/floor, 71 HC/roof
Penetrations	D, ND/roof, MH(B)/64
Fixed Openings	none
Doors	none,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FPS **FIRE AREA/ZONE:** 2-AC-70-67

AREA: 40 sq.ft. **DESCRIPTION:** HVAC DUCT SHAFT

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr/floor, HC/roof
Penetrations	D, ND/roo, MH(B)/64
Fixed Openings	none
Doors	none,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/l Pressure Interface	NO
Spurious Operation	NO

FPS **FIRE AREA/ZONE:** 2-AC-70-68

AREA: 32 sq.ft. **DESCRIPTION:** DUCT SHAFT

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr/floor, HC/roof
Penetrations	D, ND/roof, MH(B)/64
Fixed Openings	none
Doors	none,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FPS **FIRE AREA/ZONE:** 2-AC-70-69

AREA: 20 sq.ft. **DESCRIPTION:** DUCT SHAFT

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, MH(B)/64
Fixed Openings	none
Doors	none,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-70-69

Location

Auxiliary Control Bldg. - El. 70'-0" - Duct Shaft - 20 square feet - Figure 8-8

Fire Loading

Fire loading category - Minimal
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.

Design Basis Fire

A fire is not postulated to occur in the area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

There is no fire fighting or fire detection equipment in the area.

Construction

The walls defining the area are full height 2 hour rated walls.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-8, sheet 3.

Conclusions

There are minimal combustibles and no suppression or detection in the area.

The fire boundary between 2-AC-70-69 and 2-AC-50-53 was evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire between the fire areas. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-70-69 Appendix R Compliance

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-85-70

AREA: 2600 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) on outside wall
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr/3B, others NR
Floor, Ceiling, Roof	floor 2hr, NR roof
Penetrations	C, NC/exterior
Fixed Openings	louvers
Doors	(2)X/exterior,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-85-70

Location

Auxiliary Control Building - El. 85'-11" - Switchgear Room
2600 square feet - Figure 8-9

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly 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 ionization detectors which provide early warning in the control room. Manual fire fighting equipment is available in the area.

Construction

The walls defining the area are nonrated metal siding on concrete curb or parapet except the wall adjoining zone 2-PE-63-3B which is 3 hour rated. The floor is 2 hour rated and the roof is nonrated. The fire area has louvered fixed openings. Two UL Class A equivalent fire doors communicate to the exterior.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-9, sheet 1.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available manual suppression equipment is adequate to extinguish the fire.

The fire area boundary between 2-AC-85-70 and 2-AC-70-63 and 2-AC-70-64 was evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-85-70 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-85-71

AREA: 2074 sq.ft. **DESCRIPTION:** SWITCHGEAR ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) on outside wall
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr/3B, others NR
Floor, Ceiling, Roof	floor 2hr, roof NR
Penetrations	D, C, NC/exterior
Fixed Openings	louvers
Doors	(2)X/exterior,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-85-71

Location

Auxiliary Control Building - El. 85'-11" - Switchgear Room
2074 square feet - Figure 8-9

Fire Loading

Fire loading category - Low
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.

Design Basis Fire

The design basis fire would involve mostly 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 ionization detectors which provide early warning in the control room. Manual fire fighting equipment is available in the area.

Construction

The walls defining the area are nonrated metal siding on concrete curb or parapet except the wall adjoining 3-PE-63-3B which is 3 hour rated. The floor is 2 hour rated and the roof is nonrated. The fire area has louvered fixed openings. Two UL Class A equivalent fire doors communicate to the exterior.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-9, sheet 1.

Conclusions

The ionization detection system is expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. The available manual suppression equipment is adequate to extinguish the fire.

The fire area boundaries between 2-AC-85-71 and 3-AC-70-65 and 2-AC-70-64 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-85-71 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems. Functionally redundant components protected from fire damage will be utilized to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-85-72

AREA: 170 sq.ft. **DESCRIPTION:** FAN ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) outside 2-AC-85-70
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	exterior/1hr, 2hr/18,24
Floor, Ceiling, Roof	2hr floor, HC/roof
Penetrations	C, D
Fixed Openings	louvers
Doors	NR/exterior,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-85-72

Location

Auxiliary Control Building - El. 85'-0" - Battery Room - 170 square feet - Figure 8-9

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 160,000 BTU/sq. ft. (Note 1)

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

Design Basis Fire

A fire is not postulated to occur in this area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

One hose station is available outside of area 2-AC-85-70. No fire detection equipment is provided within the area.

Construction

The walls defining the area are 10" thick concrete construction. The exterior walls are 1 hour rated, the walls adjoining 2-AC-9-18, 2-AC-30-24 are 2 hour rated. The floor is 2 hour rated. Exhaust louvers penetrate the east wall of the area. Full height 8" thick concrete barriers separate the redundant battery room exhaust fans. The ventilation duct penetrations through the floor are provided with 1-1/2 hour rated fire dampers.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-9, sheet 3.

Consequences of Design Basis Fire

None

Conclusions

There is no fire detectors in the area. A hose station is available outside fire area 2-AC-85-70.

The fire area boundaries between 2-AC-85-72 and 2-AC-9-18, 2-AC-30-24 and 2-AC-70-64 were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-85-72 Appendix R Compliance

Safe shutdown capability will be provided by utilizing either Train A or Train B systems. Safe shutdown analysis demonstrates that no safe shutdown systems will be damaged by a fire in this area.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-(-5)-169

AREA: 3121 sq.ft. **DESCRIPTION:** EMERG. CHILL. WTR. PIPE TUNNEL

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	13,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	3hr/135A, HC/others
Floor, Ceiling, Roof	HC to 5, 7, 12, grade 2hr/others, roof
Penetrations	ND/5, ND/7, ND/12
Fixed Openings	M/5, M/7, M/12, M/76
Doors	none,,

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS	**Equipment**	**MCC and Switchgear**	**Cable**
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			B
Summary			B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AC-(-5)-169

Location

Auxiliary Control Building - El. (-5'-0") - Emergency Chilled Water Pipe Tunnel - 3121 square feet - Figures 8-5, 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 Btu/sq. ft.

Design Basis Fire

A fire is not expected to occur in this area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

There is no fire fighting or fire detection equipment in the area.

Construction

The walls defining the area are nonrated reinforced concrete construction with a minimum thickness of 18", except the walls adjoining 2-SE-(-5)-135A, 3-SE-(-5)-135A which are 3 hour rated. The ceiling and floor are 2 hour rated heavy concrete construction with the exception of three 28" manhole covers and 3 ducts without dampers, which communicate with the Unit 2 HVAC room (2-AC-9-12), the Unit 2 cable spreading room (2-AC-9-5), and the Unit 3 cable riser gallery (3-AC-9-7). The floor to grade is nonrated heavy concrete construction. The boundary which communicates to 2-AR-9-76 also has a metal hatch.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-5 and 8-10, sheet 3.

Conclusions

The design basis fire is insufficient to breach the area's rated barriers. A nonrated manhole cover separates the area from cable spreading room 2-AC-9-5, HVAC room 2-AC-9-12, and cable riser gallery 3-AC-9-7 above. Propagation of the fire through the small openings in the manhole cover is not anticipated as a result of the design basis fire.

FIRE AREA/ZONE 2-AC-(-5)-169

The fire boundaries between area 2-AC-(-5)-169 and the fire areas which interface with the ceiling of the pipe tunnel were evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 2-AC-(-5)-169 Appendix R Compliance

Safe shutdown capabilities will be provided by utilizing Train A systems. Functionally redundant components protected from fire damage will be utilized in conjunction with operator action on manual or disabled components to achieve safe shutdown.

One train of systems necessary to achieve hot standby and cold shutdown conditions independent of the subject fire area will be free of fire damage. Therefore, this fire area complies with the criteria of 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AC-70-175

AREA: 600 sq.ft. **DESCRIPTION:** COMMUNICATIONS ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	north and east 2hr, others 3hr
Floor, Ceiling, Roof	2hr
Penetrations	C, P, D
Fixed Openings	none
Doors	B/3-AC-70-65,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FPS **FIRE AREA/ZONE:** 2-AC-85-180

AREA: 144 sq.ft. **DESCRIPTION:** COMMUNICATIONS BATTERY ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	160,000.0 Btu's/sq.f

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none
Portable Extinguishers	none, adjacent
Detectors (type)	ionization, H2 concentration monitor

FIRE RESISTANCE RATING

Walls	NR
Floor, Ceiling, Roof	2hr/floor, NR/roof
Penetrations	C, P, ND/exterior
Fixed Openings	none
Doors	A/exterior,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
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 (Hot and Cold)			

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			
4160 V (AC)			
480 V (AC)			
120 V (AC)			
125 V (DC)			
Electric Panels			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

Volume 2