Section AR
Tab

AUXILIARY RADWASTE BUILDING

The Auxiliary Radwaste Building is a reinforced concrete structure which contains the chemical and volume control and radwaste processing systems. The Auxiliary Radwaste Building is divided into forty-one (41) fire areas. The barrier penetration and door ratings are noted in the matrices.

The Auxiliary Radwaste Building contains part or all of the following systems, which can be used for, or support, safe shutdown and cooldown:

- Chemical and Volume Control
- HVAC
- Main Steam
- Component Cooling Water
- Essential Electric Systems
- Shutdown Cooling
- Reactor Protection System

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

- Portable extinguishers.
- Fixed water spray systems are provided to protect riser galleries. Fixed temperature rate of rise heat detectors are used to operate the water spray system automatically.
- Wet pipe sprinklers.
- Smoke and fixed temperature rate of rise heat detectors.
- A standpipe system with manual hose stations.

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
2-AR-9-73	Yes	Yes	8-10, 8-11, 8-12, 8-13
2-AR-9-74	No	No	8-10, 8-11
3-AR-9-75	Yes	Yes	8-10, 8-11, 8-12, 8-13
2-AR-9-76	Yes	Yes	8-10
2-AR-9-77	No	No	8-10, 8-11, 8-12, 8-13, 8-14
3-AR-9-78A	Yes	Yes	8-10
3-AR-9-78B	Yes	Yes	8-10
2-AR-9-80	No	No	8-10
2-AR-9-81	No	No	8-10, 8-11
2-AR-9-82	Yes	Yes	8-10, 8-11
2-AR-9-83	Yes	No	8-10
2-AR-9-84A	Yes	Yes	8-10
2-AR-9-84B	Yes	Yes	8-10
2-AR-9-86	No	No	8-10, 8-11, 8-12, 8-13, 8-14
2-AR-9-87	Yes	Yes	8-10
2-AR-9-88	Yes	Yes	8-10
2-AR-9-89	Yes	Yes	8-10

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
2-AR-9-90	No	No	8-10, 8-11, 8-12, 8-13, 8-14
3-AR-9-91	Yes	Yes	8-10
3-AR-9-92	Yes	Yes	8-10
3-AR-9-93	Yes	Yes	8-10
2-AR-24-94	Yes	Yes	8-1, 8-11, 8-27
3-AR-24-95	Yes	Yes	8-11, 8-12, 8-13
3-AR-24-96	Yes	Yes	8-11, 8-12, 8-13
2-AR-24-98	Yes	Yes	8-11, 8-12, 8-13
2-AR-24-99	Yes	Yes	8-11, 8-12, 8-13
2-AR-24-100	Yes	Yes	8-11
3-AR-24-101	Yes	Yes	8-11
2-AR-37-102A	Yes	Yes	8-12, 8-13
2-AR-24-102B	Yes	Yes	8-11
3-AR-37-104	No	No	8-12
2-AR-37-105	No	No	8-12
2-AR-37-107	No	No	8-12, 8-13
2-AR-37-108	No	No	8-12, 8-13

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
3-AR-37-109	No	No	8-12, 8-13
3-AR-37-110	No	No	8-12, 8-13
2-AR-50-111A	Yes	Yes	8-13
2-AR-50-111B	Yes	No	8-13
2-AR-63-116	Yes	No	8-14
3-AR-63-117	Yes	Yes	8-14
3-AR-63-118	Yes	Yes	8-14
2-AR-63-119	Yes	Yes	8-14
2-AR-63-120	Yes	Yes	8-14
2-AR-63-121	No	No	8-14
2-AR-68-178A	No	No	8-14
2-AR-68-178B	No	No	8-14, 8-14A

FPS **FIRE AREA/ZONE:** 2-AR-9-73

AREA: 906 sq.ft. **DESCRIPTION:** PRIMARY PLANT MAKE-UP TK.ROOM

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, (1) in 2-AR-37-102A
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north, west and 102A 3hr, others HC
Floor, Ceiling, Roof	2hr/ceiling HC/floor
Penetrations	P, C, D, QP/2A
Fixed Openings	none
Doors	A/2-AR-9-86, 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	A,B,N	A,B	A,B
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,N	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			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AR-9-73

Location

Auxiliary Radwaste Building - El. 9'-0" - Primary Plant Make-up Tk. Room - 906 Square feet - Figure 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AR-37-102A & Yard 2-YD-30-200A.

Construction

The walls which border the area are reinforced concrete with a 3 hour rating. The door entering 2-AR-9-86 is a Class A fire door rated for 3 hours, the door exiting to the yard area is non rated. The floor to grade is non-rated heavy concrete construction. The ceiling to 2-AR-68-178A is 2 hour rated. (For exterior walls and doors, see IMPELL Calc. 0310-189-C007 for acceptability)

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-12, Sheet 3.

Conclusions

Fire Area 2-AR-9-73 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems.

Safe shutdown capability will be provided by an operator action to align the diesel driven fire water pump with the CCW surge tank to provide CCW make-up water from the fire water system.

Both Train A & B CCW make-up pumps are located adjacent to the safety related PPMS tank in this area. Fire Protection features for safe shutdown equipment in this area are not required since redundant makeup capability to the CCW system using the CCW surge tanks is credited for a fire.

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-AR-9-74

AREA: 2534 sq.ft. **DESCRIPTION:** TANK ROOMS

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, (1) in 2-AR-37-102A
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/76,94, others HC
Floor, Ceiling, Roof	2hr/ceiling HC/floor
Penetrations	P, C, D
Fixed Openings	CH/102A
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:** 3-AR-9-75

AREA: 906 sq.ft. **DESCRIPTION:** PRIMARY PLANT MAKE-UP TK. ROOM

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, (1) in 2-AR-37-102A
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	west, south, and 102A 3hr, others HC
Floor, Ceiling, Roof	2hr ceiling/floor
Penetrations	P, C, D, QP/2A
Fixed Openings	none
Doors	A/2-AR-9-77, 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	A,B,N	A,B	A,B
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,N	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			
Summary			

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AR-9-75

Location

Auxiliary Radwaste Building - El. 9'-0"
- Primary Plant Make-up Tk. Room - 906 sq. ft. - Fig. 8-10

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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 2-AR-37-102A and Yard 2-YD-30-200B.

Construction

The walls which border the area are reinforced concrete with a 3 hour rating. The door entering 2-AR-9-77 is a Class A fire door rated for 3 hours, the door exiting to the yard area is non rated. The floor to grade is non rated heavy concrete construction. The ceiling to 2-AR-68-178A is 2 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 8-12, Sheet 3.

Conclusions

Fire Area 3-AR-9-75 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B Systems.

Safe shutdown capability will be provided by an operator action to align the diesel driven fire water pump with the CCW surge tank to provide CCW make-up water from the Fire Water System.

Both Train A and Train B CCW make up pumps are located adjacent to the safety related PPMS Tank in this area. Fire protection features for safe shutdown equipment in this area are not required since redundant makeup capability to the CCW system using the CCW surge tanks is credited for a fire.

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-AR-9-76

AREA: 24076 sq.ft. **DESCRIPTION:** CORRIDORS & ROOMS

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	(4)
Portable Extinguishers	yes
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	to other bldgs 3hr, w/in Radwaste bldg.3hr,2hr,HC
Floor, Ceiling, Roof	2hr ceiling, floor to 169, HC/grade
Penetrations	C,P, SEE TEXT
Fixed Openings	CH/94, MH/169, OP/80
Doors	A/2-PE-9-2A, A/3-PE-9-2A, B/90,77,86,,W/84A,84B,78A,78B,87,88,89,91,92,93,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control		B	A,B
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)		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	YES

FIRE AREA/ZONE 2-AR-9-76

Location

Auxiliary Radwaste Building - El. 9'-0" - Corridor and Rooms - 24,076 square feet - Fig. 8-10

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 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 in the area.

Construction

The barriers of this area to fire areas in adjacent building are reinforced concrete with 3 hour ratings. Within the Radwaste Building the walls to areas 2-AR-9-73, -74, -75 are also 3 hour rated. The ceiling is 2 hour rated concrete construction. The floor to grade is nonrated heavy concrete construction. The following areas within the Radwaste Building which border this area have 2 hour ratings, 2-AR-9-77, -78, -86 and -90. The remaining areas are of nonrated heavy reinforced concrete construction having an approximate thickness of 12 inches. The area communicates with the Unit 2 and Unit 3 penetration buildings (2-PE-9-2A and 3-PE-9-2A) through 3 hour rated doors. Two 1-1/2 hour rated doors open to the stairwells (2-AR-9-77 and 2-AR-9-86). Nonrated watertight doors separate the area from the boric acid makeup tank pump rooms (2-AR-9-84A, 2-AR-9-84B, 3-AR-9-78A, 3-AR-9-78B), and the charging pump rooms (2-AR-9-87, 2-AR-9-88, 2-AR-9-89, 3-AR-9-91, 3-AR-9-92, 3-AR-9-93). The elevator door is 1-1/2 hour rated. The seals in Licensee Controlled Specification barriers which are not rated consistent with the barrier or whose construction does not support a rating or are unsealed are: NP/91, 92, 89, 87, 83, 81, 82, 88, 93; QP/87, 81; QC/87 and 93. Ventilation ducts without dampers are installed in the barriers between this area and the following areas; 3-AR-9-78A and -78B, 2-AR-9-80, 2-AR-9-81, 2-AR-9-82, 2-AR-9-83, 2-AR-9-84A and -84B, 2-AR-9-88, 2-AR-9-89, 3-AR-9-91, 3-AR-9-92.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-10, sheet 3.

Conclusions

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 low fire loading and the substantial construction of the barriers and nonrated doors preclude the propagation of the design basis fire beyond the boundaries defining the area.

The fire boundaries between 2-AR-9-76 and 2-AC-(-5)-169, 2-AR-9-86, 2-AR-9-87, 3-AR-9-93, 2-AR-24-94, and 3-AR-24-95, 2-AR-24-99 were evaluated. The boundaries and associated fire protection features were found to be adequate to prevent the propagation of a fire beyond the fire boundaries.

Fire Area 2-AR-9-76 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.b. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.b has been accepted for redundant safe shutdown cables with less than 20 foot separation without detection and suppression.

FPS **FIRE AREA/ZONE:** 2-AR-9-77

AREA: 128 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) in adjacent area on each floor
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south and 75/ 3hr, others 2hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	C, P
Fixed Openings	none
Doors	A/3-PE-63-3B, A/3-AR-9-75,,B/76,94,102A,111A,116,

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:** 3-AR-9-78A

AREA: 54 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP PUMP RM.

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, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south 3hr, others HC
Floor, Ceiling, Roof	2hr ceiling, HC/floor
Penetrations	P, C, ND/76, NP/78B, NC/78B
Fixed Openings	none
Doors	W/2-AR-9-76

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	A,N	A	A,B
Main Feedwater			
Main Steam			
HVAC	A,		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,N	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,X
Summary			A,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AR-9-78A

Location

Auxiliary Radwaste Building - El. 9'-0" - Boric Acid Make-up Pump Room - 54 square feet - Fig. 8-10

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 oil.

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

Fire Protection Equipment

There is no fire fighting or fire detection equipment within the zone. Manual fire fighting equipment is available in adjacent area 2-AR-9-76.

Construction

The south wall of the zone is reinforced concrete with a 3 hour rating. The remaining walls are nonrated reinforced concrete construction with an approximate thickness of 12 inches. The ceiling is 2 hour rated. The floor is heavy concrete construction. A watertight door allows access to the zone from the corridor (2-AR-9-76). The ventilation duct penetrations are not provided with 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 8-10, sheet 3.

Conclusions

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

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

Fire Area 3-AR-9-78 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.b. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.b has been accepted for redundant safe shutdown cables and equipment not separated by 20 feet free of intervening combustibles without suppression and detection.

FPS **FIRE AREA/ZONE:** 3-AR-9-78B

AREA: 54 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP PUMP RM.

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, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south 3hr, west 2hr, north and east HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, NP/78A, NC/78A, ND/76
Fixed Openings	none
Doors	W/2-AR-9-76

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	A,N		A,B
Main Feedwater			
Main Steam			
HVAC	A		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,N		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	YES

FIRE AREA/ZONE 3-AR-9-78B

Location

Auxiliary Radwaste Building - El. 9'-0" - Boric Acid Make-up Pump Room - 54 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting or fire detection equipment in the zone. Manual fire fighting equipment is available in adjacent area 2-AR-9-76.

Construction

The south wall of the zone is reinforced concrete with a 3 hour rating. The west wall is 2 hour rated. The north and east walls are nonrated reinforced concrete construction with an approximate thickness of 12 inches. The ceiling is 2 hour rated. The floor is heavy concrete construction. A watertight door allows access to the zone from the corridor (2-AR-9-76). The ventilation duct penetrations are not provided with 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 8-10, sheet 3.

Consequences of Design Basis Fire

The design basis fire has been evaluated on a fire area basis, consistent with 10CFR50 Appendix R and NRC guidance. The consequences of a design basis fire on safe shutdown systems for this fire zone are provided in fire area/zone 3-AR-9-78A.

Conclusions

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

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

Appendix R compliance for fire area 3-AR-9-78 is discussed in fire zone 3-AR-9-78A.

FPS **FIRE AREA/ZONE:** 2-AR-9-80

AREA: 302 sq.ft. **DESCRIPTION:** CHEM. WASTE TK. RM

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	south 3hr, 78B 2hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C, ND/76, NP/76
Fixed Openings	CH/96
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-AR-9-81

AREA: 2067 sq.ft. **DESCRIPTION:** RADWASTE PRIMARY TK.RM.

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	west, 2A, 148G, 2C, others HC
Floor, Ceiling, Roof	2hr/ceiling, floor to 76, HC/floor grade
Penetrations	P, C, NP/76, ND/76
Fixed Openings	CH/102A
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-AR-9-82

AREA: 1971 sq.ft. **DESCRIPTION:** MISC.WASTE EVAP.COND.MONITOR TK.RM.

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	west, 2A, 148G, 2C 3hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P,C,NP/76,ND/76,NP/102B,NC/83,QP/148G,ND/83
Fixed Openings	CH/102A
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-AR-9-82

Location

Auxiliary Radwaste Building - El. 9'-0" - Misc Waste Evap. Cond. Monitor Tk. Rm. - 1971 square feet - Fig. 8-10, 8-11

Category

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 manual operation. The maximum credible fire is postulated to involve transient combustible material.

Fire Protection Equipment

There is no fire fighting equipment in this area.

Construction

The north and west walls of this area are 3 hour rated, the other walls are nonrated heavy concrete. The ceiling is 2 hour rated. The floor is heavy concrete construction. A nonrated concrete hatch connects to adjacent area 2-AR-37-102. In addition, a ventilation duct with a nonrated damper and a nonrated piping penetration connect to fire area 2-AR-9-76.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-10, sheet 3.

Conclusions

Portable smoke exhaust fans may then be used to vent smoke from the fire area.

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

Fire Area 2-AR-9-82 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-AR-9-83

AREA: 302 sq.ft. **DESCRIPTION:** CONC. BORIC ACID TK. RM

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

FIRE RESISTANCE RATING

Walls	north 3hr, 84B/2hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C, NP/76, ND/76, NC/82
Fixed Openings	CH/98
Doors	none,,

HOT STANDBY SYSTEMS

Equipment	Valves	Cable
Reactor Coolant		
Reactor Protection System		
Shutdown Cooling		
Chemical and Volume Control		A
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)		A

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-AR-9-83

Location

Auxiliary Radwaste Building - El. 9'-0" - Concentrated Boric Acid Tank Room - 302 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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. Manual fire fighting equipment is available in area 2-AR-24-94.

Construction

The north wall of the area is reinforced concrete with a 3 hour rating. The wall to 2-AR-9-84B is 2 hour rated. The remaining walls are nonrated heavy concrete construction with an approximate thickness of 24 inches. The ceiling is 2 hour rated. The floor is heavy concrete construction. The area is accessed by ladder from a concrete hatch in area 2-AR-24-98 above. The ventilation duct penetration is fitted with an airtight seal but no fire damper is provided.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-10 and 8-11, sheet 3.

Conclusions

Normal ventilation will effectively remove smoke generated by the design basis fire. Portable smoke exhaust fans may then be used to vent smoke from the fire area.

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the barriers preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 2-AR-9-83 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-AR-9-84A

AREA: 54 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP PUMP RM.

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, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north 3hr, others HC
Floor, Ceiling, Roof	2hr ceiling, HC/floor
Penetrations	P, C, ND/76, NP/84B
Fixed Openings	none
Doors	W/2-AR-9-76,,

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	A,N	A	A,B
Main Feedwater			
Main Steam			
HVAC	A		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,N	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,X
Summary			A,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AR-9-84A

Location

Auxiliary Radwaste Building - El. 9'-0" - Boric Acid Make-Up Pump Room - 54 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting or fire detection equipment available in the zone. Manual fire fighting equipment is available in adjacent area 2-AR-9-76.

Construction

The north wall of the zone is reinforced concrete with a 3 hour rating. The remaining walls are nonrated reinforced concrete with an approximate thickness of 24 inches. The ceiling is 2 hour rated. The floor is heavy concrete construction. A watertight door allows access to the zone from the corridor (2-AR-9-76). The ventilation duct penetrations are not provided with 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 8-10, sheet 3.

Conclusions

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

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Fire Area 2-AR-9-84 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.b. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.b has been accepted for redundant cables with less than 20 foot separation without suppression and detection.

FPS **FIRE AREA/ZONE:** 2-AR-9-84B

AREA: 54 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP PUMP RM.

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, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north 3hr, west 2hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, ND/76, NP/84A
Fixed Openings	none
Doors	W/2-AR-9-76,,

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	A,N		A,B
Main Feedwater			
Main Steam			
HVAC	A		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,N		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	YES

FIRE AREA/ZONE 2-AR-9-84B

Location

Auxiliary Radwaste Building - El. 9'-0" - Boric Acid Make-Up Pump Room - 54 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting or fire detection equipment available within the zone. Manual fire fighting equipment is available in adjacent area 2-AR-9-76.

Construction

The north wall of the zone is reinforced concrete with a 3 hour rating. The west wall is 2 hour rated. The remaining walls are nonrated reinforced concrete construction with an approximate thickness of 24 inches. The ceiling is 2 hour rated. The floor is heavy concrete construction. A watertight door allows access to the zone from the corridor (2-AR-9-76). The ventilation duct penetrations are not provided with 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 8-10, sheet 3.

Conclusions

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

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Appendix R compliance for fire area 2-AR-9-84 is discussed in fire zone 2-AR-9-84A.

FPS **FIRE AREA/ZONE:** 2-AR-9-86

AREA: 128 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) in adjacent area each floor
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north and 73/3hr, others 2hr
Floor, Ceiling, Roof	2hr/ceiling, 76, HC/floor grade
Penetrations	C, P
Fixed Openings	none
Doors	B/2-AR-9-76,B/2-AR-24-94,B/2-AR-37-102A,B/2-AR-50-111A,B/2-AR-63-116,A/2-AR-9-73,

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-AR-9-87

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	A	N	A,B
Main Feedwater			
Main Steam			
HVAC	A		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	N	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
Summary			A,B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AR-9-87

Location

Auxiliary Radwaste Building - El. 9'-0" - Charging Pump Room - 299 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-9-76. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The south wall of the area is reinforced concrete with a 3 hour rating. The east wall is 18-inch thick concrete and concrete block construction. The east, north and west walls are nonrated heavy reinforced concrete with an approximate thickness of 24 inches. The ceiling is 2 hour rated. The floor is heavy concrete construction. A watertight door allows access to the area from the corridor (2-AR-9-76). Ventilation duct penetrations 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 8-10, 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 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 then may be used to vent smoke from the area.

The fire boundaries between 2-AR-9-87 and 2-AR-9-76 and 2-AR-24-94 were evaluated. The fire boundary and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The low fire loading and the substantial construction of the barriers and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 2-AR-9-87 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 damaged 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-AR-9-88

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
CCW (To SDC)			
HVAC			
Summary (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)	A/B		
120 V (AC)			
125 V (DC)			
Electric Panels			B
Summary	A/B		B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AR-9-88

Location

Auxiliary Radwaste Building - El. 9'-0" - Charging Pump Room - 299 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-9-76. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The north and south walls are 3 hour rated reinforced concrete. The west wall is nonrated reinforced concrete construction with an approximate thickness of 24 inches. The east wall is 18-inch thick nonrated concrete and concrete block construction. The ceiling is 2 hour rated. The floor is heavy concrete construction. A nonrated watertight door allows access to the area from the corridor (2-AR-9-76). The ventilation duct penetrations are not provided with 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 8-10, 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 available portable equipment is adequate to extinguish the fire.

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

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 2-AR-9-88 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-AR-9-89

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	B		B
Main Feedwater			
Main Steam			
HVAC	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)	B		B

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AR-9-89

Location

Auxiliary Radwaste Building - El. 9'-0" - Charging Pump Room - 299 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-9-76. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The north wall is 3 hour rated reinforced concrete. The south and west walls of the area are nonrated reinforced concrete with an approximate thickness of 24 inches. The east wall is 18-inch thick nonrated concrete and concrete block construction. The ceiling is 2 hour rated. The floor is heavy concrete construction. A nonrated watertight door allows access to the area from the corridor (2-AR-9-76). Ventilation duct penetrations are not provided with 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 8-10, 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 available portable equipment is adequate to extinguish the fire.

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

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 2-AR-9-89 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-AR-9-90

AREA: 100 sq.ft. **DESCRIPTION:** ELEVATOR

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 adjacent zone each floor
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization in elev. machine room

FIRE RESISTANCE RATING

Walls	3hr/121, 2hrs/other interior, HC/exterior
Floor, Ceiling, Roof	HC
Penetrations	NC/exterior, NC/102A
Fixed Openings	louver/exterior
Doors	B/2-AR-9-76,B/2-AR-24-94,B/2-AR-37-102A,,B/2-AR-50-111A,B/2-AR-63-116,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

FPS **FIRE AREA/ZONE:** 3-AR-9-91

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	B		B
Main Feedwater			
Main Steam			
HVAC	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)	B		B

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AR-9-91

Location

Auxiliary Radwaste Building - El. 9'-0" - Charging Pump Room - 299 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-9-76. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The south wall is 3 hour rated reinforced concrete. The north and west walls of the area are nonrated reinforced concrete with an approximate thickness of 24 inches. The east wall is 18-inch thick nonrated concrete and concrete block construction. The ceiling is 2 hour rated. The floor is heavy concrete construction. A nonrated watertight door allows access to the area from the corridor (2-AR-9-76). Ventilation duct penetrations are not provided with 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 8-10, 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 available portable equipment is adequate to extinguish the fire.

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

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-AR-9-91 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-AR-9-92

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

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

COLD SHUTDOWN SYSTEMS	**Equipment**	**Valves**	**Cable**
Shutdown Cooling			
CCW (To SDC)			
HVAC			
Summary (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)	A/B		
120 V (AC)			
125 V (DC)			
Electric Panels			B
Summary	A/B		B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AR-9-92

Location

Auxiliary Radwaste Building - El. 9'-0" - Charging Pump Room - 299 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-9-76. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The north and south walls are 3 hour rated reinforced concrete. The west wall is nonrated reinforced concrete with an approximate thickness of 24 inches. The east wall is 18-inch thick nonrated concrete and concrete block construction. The ceiling is 2 hour rated. The floor is heavy concrete construction. A nonrated watertight door allows access to the area from the corridor (2-AR-9-76). Ventilation duct penetrations are not provided with 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 8-10, 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 available portable equipment is adequate to extinguish the fire.

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

The fire area/zone boundaries were evaluated. The low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-AR-9-92 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-AR-9-93

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	A	N	A,B
Main Feedwater			
Main Steam			
HVAC	A		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	N	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
Summary			A,B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AR-9-93

Location

Auxiliary Radwaste Building - El. 9'-0" - Charging Pump Room - 299 square feet - Fig. 8-10

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-9-76. One ionization smoke detector, located within the area, provides early warning alarm in the control room.

Construction

The north wall of the area is 3 hour rated reinforced concrete. The south and west walls are nonrated heavy reinforced concrete with an approximate thickness of 24 inches. The east wall is nonrated 18-inch thick concrete and concrete block construction. The ceiling is 2 hour rated. The floor is heavy concrete construction. A watertight door allows access to the area from the corridor (2-AR-9-76). Ventilation duct penetrations 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 8-10, 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 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 then may be used to vent smoke from the area.

The fire boundaries between 3-AR-9-93 and 2-AR-9-76 and 2-AR-24-94 were evaluated. The fire boundary and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the fire boundaries. The low fire loading and the substantial construction of the barriers and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-AR-9-93 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1.

FPS **FIRE AREA/ZONE:** 2-AR-24-94

AREA: 14801 sq.ft. **DESCRIPTION:** CORRIDOR & ROOMS

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	(3)
Portable Extinguishers	yes
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	HC/Containment, 3hr/other bldgs, HC/other rooms
Floor, Ceiling, Roof	2hr
Penetrations	C, P, D, SG, SEE TEXT
Fixed Openings	CH/76, CH/102A, OD/96, OD/98
Doors	B/77,86,90,95,96,98,99,,

HOT STANDBY SYSTEMS

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

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	YES

FIRE AREA/ZONE 2-AR-24-94

Location

Auxiliary Radwaste Building - El. 24'-0" - Corridor and Rooms - 14801 square feet - Figs. 8-1, 8-11, 8-27

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 expected to occur in this area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

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

Construction

Within the Radwaste Building the walls to 2-AR-9-73, -74, and -75 are reinforced concrete with 3 hour rating. The walls to 2-AR-9-77, -86, -90 and 2-AR-24-95, -96, -98, -99 are 2 hour rated concrete. The remaining walls to 2-AR-9-81, -82, 2-AR-24-100, -101 and -102B are nonrated heavy concrete. The walls separating the area from the penetration buildings (2-PE-9-2A and 3-PE-9-2A) are 3 hour rated. The walls separating the area from the containment building walls (2-CO-9-1C and 3-CO-9-1C) are heavy concrete with an approximate thickness of 48 inches. The floor and ceiling are 2 hour rated. The zone communicates with the stairwells (2-AR-9-86 and 2-AR-9-77) and the duct shaft rooms (3-AR-24-95 and 2-AR-24-99) through 1-1/2 hour rated doors. The zone communicates with the boric acid makeup tank areas (3-AR-24-96 and 3-AR-24-98) through an open doorway to each tank area. The elevator door is 1-1/2 hour rated. Duct penetrations to the letdown heat exchanger rooms (2-AR-24-100 and 3-AR-24-101) are not provided with fire dampers. The remainder of the ventilation duct penetrations are provided with 3 hour rated dampers. The seals in Licensee Controlled Specification barriers which are not rated consistent with the barrier or whose construction does not support a rating or are unsealed are NP/100, NP/101, QP/2A (Unit 2) and QP/2A (Unit 3).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-1, 8-11, and 8-27, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to vent smoke from the fire area.

The fire barriers between 2-AR-24-94 and 2-PE-9-2A, 2-PE-30-2C, 2-PE-30-2D, 3-PE-9-2A, 3-PE-30-2C, 3-PE-30-2D, and 2-AR-9-76 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 low fire loading and the substantial construction of the barriers preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 2-AR-24-94 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.b. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.b has been accepted for redundant safe shutdown cables and equipment with less than 20 foot separation without suppression and detection.

FPS **FIRE AREA/ZONE:** 3-AR-24-95

AREA: 96 sq.ft. **DESCRIPTION:** DUCT SHAFT 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-AR-24-94
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	none
Doors	B/2-AR-24-94, B/2-AR-37-102A,,B/2-AR-50-111A

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			A,B
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,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
Summary			A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AR-24-95

Location

Auxiliary Radwaste Building - El. 24'-0" - Duct Shaft Room - 96 square feet - Fig. 8-11, 8-12, 8-13

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 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 protection or fire detection equipment in the area. Manual fire fighting equipment is available in adjacent areas 2-AR-24-94, 2-AR-37-102A, and 2-AR-50-111A.

Construction

The south wall of the area is reinforced concrete with a 3 hour rating. The north, east, and west walls are 2 hour rated concrete construction. The floor and ceiling are 2 hour rated. At each elevation, 1-1/2 hour doors separate the area from the adjacent corridors (2-AR-24-94, 2-AR-37-102A, and 2-AR-50-111A). 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 revisions of Figures 8-11, 8-12, and 8-13, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire. Portable smoke exhaust fans may then be utilized to vent smoke from the fire area.

The fire boundaries between 3-AR-24-95 and 2-AR-24-94, 2-AR-9-76, 2-AR-9-77 and 2-AR-50-111A 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-AR-24-95 Appendix R Compliance

Safe shutdown capacity 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-AR-24-96

AREA: 491 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP TK. ROOM

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

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AR-24-96

Location

Auxiliary Radwaste Building - El. 24'-0" - Boric Acid Make-Up Tank Room - 491 square feet - Fig. 8-11, 8-12, 8-13

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 protection or fire detection equipment in this area. Manual fire fighting equipment is available in adjacent area 2-AR-24-94.

Construction

The south wall is reinforced concrete with a 3 hour rating The east, west, and north walls are 2 hour rated, as are the ceiling and floor. At elevations 37'-0" and 50'-0", 1-1/2 hour rated doors separate the area from the corridors (2-AR-37-102A and 2-AR-50-111A). At elevation 24'-0", the area communicates with corridor 2-AR-24-94 through an open doorway. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers. A hatch in the floor allows access to the chemical waste tank room (2-AR-9-80) below.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-11, 8-12, and 8-13, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The design basis fire will be insufficient to breach the boundaries defining the area.

Fire Area 3-AR-24-96 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-AR-24-98

AREA: 491 sq.ft. **DESCRIPTION:** BORIC ACID MAKE-UP TK. ROOM

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

FIRE RESISTANCE RATING

Walls	north 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	CH/83, OD/94
Doors	B/2-AR-37-102A,,B/2-AR-50-111A,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	N	A,B	A,B
Main Feedwater			
Main Steam			
HVAC			B
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			B
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)	N	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	YES

FIRE AREA/ZONE 2-AR-24-98

Location

Auxiliary Radwaste Building - El. 24'-0" - Boric Acid Make-Up Tank Room - 491 square feet - Fig. 8-11, 8-12, 8-13

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 protection or fire detection equipment in this area. Manual fire fighting equipment is available in adjacent area 2-AR-24-94.

Construction

The north wall is reinforced concrete with a 3 hour rating. The east, west, and south walls are 2 hour rated, as are the ceiling and floor. At elevations 37'-0" and 50'-0" 1-1/2 hour rated doors separate the area from the corridors (2-AR-37-102A and 2-AR-50-111A). At elevation 24'-0", the area communicates with corridor 2-AR-24-94 through an open doorway. Ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers. A hatch in the floor allows access to the concentrated boric acid tank room (2-AR-9-83) below.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-11, 8-12, and 8-13, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The design basis fire will be insufficient to breach the barriers defining the area.

Fire Area 2-AR-24-98 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-AR-24-99

AREA: 96 sq.ft. **DESCRIPTION:** DUCT SHAFT 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) available on each floor
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	none
Doors	B/2-AR-24-94, B/2-AR-37-102A,,B/2-AR-50-111A,

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
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			A
Summary			A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AR-24-99

Location

Auxiliary Radwaste Building - El. 24'-0" - Duct Shaft Room - 96 square feet - Fig. 8-11, 8-12, 8-13

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 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 protection or fire detection equipment in this area. Manual fire fighting equipment is available in adjacent areas 2-AR-24-94, 2-AR-37-102A, and 2-AR-50-111A.

Construction

The north wall of the area is reinforced concrete with a 3 hour rating. The south, east, and west walls are 2 hour rated concrete construction. The floor and ceiling are 2 hour rated. At each elevation, 1-1/2 hour doors separate the area from the adjacent corridors (2-AR-24-94, 2-AR-37-102A, and 2-AR-50-111A). 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 revisions of Figures 8-11, 8-12, and 8-13, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 2-AR-24-99 and 2-AR-9-76, 2-AR-9-86, 2-AR-24-94 and 2-AR-50-111A 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 2-AR-24-99 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-AR-24-100

AREA: 202 sq.ft. **DESCRIPTION:** LETDOWN HT. EXCH. RM.

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

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AR-24-100

Location

Auxiliary Radwaste Building - El. 24'-0" - Letdown Heat Exchanger Room - 202 square feet - Fig. 8-11

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 protection or fire detection equipment in this area. Manual fire fighting equipment is available in adjacent area 2-AR-24-94.

Construction

The north, south, and west walls are heavy concrete, with an approximate thickness of 24 inches. The east wall is 2-1/2 foot thick concrete and concrete block construction. The floor and ceiling are 2 hour rated. There are no doors to this area; access is through removal of the masonry blocks. The ventilation duct penetrations are not provided with 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 8-11, sheet 3.

Conclusions

Normal ventilation will effectively remove smoke generated by the design basis fire. Portable smoke exhaust fans may then be used to vent smoke from the fire area.

The design basis fire is postulated to involve transient combustibles.

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

Fire Area 2-AR-24-100 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-AR-24-101

AREA: 202 sq.ft. **DESCRIPTION:** LETDOWN HT. EXCH. RM.

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

FIRE RESISTANCE RATING

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

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

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AR-24-101

Location

Auxiliary Radwaste Building - El. 24'-0" - Letdown Heat Exchanger Room - 202 square feet - Fig. 8-11

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 protection or fire detection equipment in this area. Manual fire fighting equipment is available in adjacent area 2-AR-24-94.

Construction

The north, south, and west walls are heavy concrete, with an approximate thickness of 24 inches. The east wall is 2-1/2 foot thick concrete and concrete block construction. The floor and ceiling are 2 hour rated. There are no doors to this area; access is through removal of the masonry blocks. The ventilation duct penetrations are not provided with 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 8-11, sheet 3.

Conclusions

Normal ventilation will effectively remove smoke generated by the design basis fire. Portable smoke exhaust fans may then be used to vent smoke from the fire area.

The design basis fire is postulated to involve transient combustibles.

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

Fire Area 3-AR-24-101 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 damaged 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-AR-37-102A

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

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers in rooms 339, 337, 336
Hose Stations	(4)
Portable Extinguishers	yes
Detectors (type)	ionization partial,heat detectors partial

FIRE RESISTANCE RATING

Walls	to other Bldgs,73,75,107,109,111A/3hr, NR/102B, HC/2-AR-50-111A (Room 412 & 413)
Floor, Ceiling, Roof	2hr, NR/102B
Penetrations	P, C, D, ND/102B, NP/exterior
Fixed Openings	CH/74,81,82,94,102B,111A,116, MH/111A, ND/111A, NC/111A
Doors	A/3-AR-37-104, A/2-AR-37-105, B/2-AR-9-90, 2-AR-50-111A, NR/exterior, B/others

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

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	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AR-37-102A

Location

Auxiliary Radwaste Building - El. 37'-0" - Corridor and Rooms - 23,071 square feet - Fig. 8-12

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 40,000 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 oil, flammable liquid, cable insulation and Class A combustibles.

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

Fire Protection Equipment

The zone contains an automatic wet pipe sprinkler system covering the drum storage, reusable clothing, and the loading dock areas. Manual fire fighting equipment is available within the zone. Fixed temperature rate of rise heat detectors or ionization smoke detectors are located in hazard and storage areas to provide early warning alarm in the control room.

Construction

The walls of the area which border other buildings are reinforced concrete with a 3 hour rating. The walls separating the area from the tank rooms (2-AR-37-107 and 3-AR-37-109) and the makeup storage tank rooms (2-AR-9-73 and 3-AR-9-75) are also 3 hour rated. Other interior areas are separated by nonrated or 2 hour rated concrete walls. The floor and ceiling are 2 hour rated. The elevator door is 1-1/2 hour rated. Two 3 hour rated doors communicate with the pipe rooms (2-AR-37-105 and 3-AR-37-104). Ventilation duct penetration to 102A (room 412/413) is not provided with a fire damper. There are open penetrations in the walls from room 412 & 413 to fire area 2-AR-50-111A.

The walls separating room 412 & 413 from 2-AR-50-111A are nonrated. The door from 413 to 2-AR-50-111A is 1-1/2 hour rated.

A nonrated roll-up door opens to the exterior from the loading dock. All other doors are 1-1/2 hour rated. Ventilation duct penetrations to adjacent fire areas are provided with 1-1/2 hour fire dampers. The ventilation duct penetration to adjacent area 2-AR-24-102B is not provided with a fire damper.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-12, sheet 3.

Conclusions

Ionization detectors and fixed temperature rate of rise heat detectors are installed locally to cover hazard and storage areas. The installed detectors are expected to detect the fire in its initial stages of growth 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 of a fire in the loading dock, reusable clothing, or drum storage areas, the wet pipe sprinklers will actuate automatically to control and 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 fire area.

The barriers between 2-AR-37-102A and 2-AR-50-111A were evaluated. The boundaries and their associated fire protection features were found to be adequate to prevent the propagation of fire between fire areas.

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

Fire Area 2-AR-37-102 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-AR-24-102B

AREA: 896 sq.ft. **DESCRIPTION:** EQUIPMENT ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	west 3hr, others HC or NR
Floor, Ceiling, Roof	2hr floor, ceiling NR
Penetrations	P, C, ND/102A, NP/82
Fixed Openings	CH/102A
Doors	B/2-AR-37-102A,,

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	YES

FIRE AREA/ZONE 2-AR-24-102B

Location

Auxiliary Radwaste Building - El. 24'-0" - Equipment Room - 896 square feet

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 and Class A combustibles. The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the zone.

Fire Protection Equipment

The zone contains no automatic suppression or hose stations. Manual fire fighting equipment is available in the zone. Ionization smoke detectors are located in the zone to provide early warning alarm to the control room.

Construction

The west wall of the zone is 3 hour rated. The stair wall communicating with 2-AR-37-102A is nonrated as is the ceiling to 102A. All others are of nonrated heavy concrete construction. The floor is 2 hour rated. The zone contains ductwork without dampers, a concrete hatch and a rated fire door which all communicate with 2-AR-37-102A.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-11, 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.

Portable smoke exhaust fans may be used to vent smoke from the fire area.

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

Appendix R compliance for fire area 2-AR-24-102 is discussed in fire zone 2-AR-24-102A.

FPS **FIRE AREA/ZONE:** 3-AR-37-104

AREA: 144 sq.ft. **DESCRIPTION:** PIPE RM.

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C
Fixed Openings	none
Doors	A/2-AR-37-102A

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-AR-37-105

AREA: 144 sq.ft. **DESCRIPTION:** PIPE RM.

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C
Fixed Openings	none
Doors	A/2-AR-37-102A,,

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-AR-37-107

AREA: 1599 sq.ft. **DESCRIPTION:** TANK ROOMS

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
Floor, Ceiling, Roof	2hr
Penetrations	C, P
Fixed Openings	CH/116
Doors	none,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	N		
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)	N		

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-AR-37-108

AREA: 51 sq.ft. **DESCRIPTION:** RADIOACTIVE PIPE CHASE

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-AR-37-102A
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	east 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, P
Fixed Openings	none
Doors	B/2-AR-37-102A, B/2-AR-50-111A,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume 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:** 3-AR-37-109

AREA: 1599 sq.ft. **DESCRIPTION:** TANK ROOMS

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
Floor, Ceiling, Roof	2hr
Penetrations	C, P
Fixed Openings	CH/116
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control	N		
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)	N		

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:** 3-AR-37-110

AREA: 51 sq.ft. **DESCRIPTION:** RADIOACTIVE PIPE CHASE

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3 hr/109, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, P
Fixed Openings	none
Doors	B/2-AR-37-102A

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-AR-50-111A

AREA: 19015 sq.ft. **DESCRIPTION:** CORRIDOR & ROOMS

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	(3)
Portable Extinguishers	yes
Detectors (type)	ionization (local)

FIRE RESISTANCE RATING

Walls	3hr/3A, 73, 102A, 75, 107,109, HC/102A (Room 412 & 413), NR/111B,2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	C, D
Fixed Openings	OD/111B, CH/102A,116, louvers/111B, MH/102A, ND/102A, NC/102A
Doors	B/90,86,77,95,99,98,96,110,108, 102A, NR/111B

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

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,X
Summary			A,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AR-50-111A

Location

Auxiliary Radwaste Building - El. 50'-0" - Corridor and Rooms - 19,015 sq. ft.

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 plastics, Class A and miscellaneous combustibles. The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the zone.

Fire Protection Equipment

The zone contains no automatic suppression systems. Manual fire fighting equipment such as hose stations and portable extinguishers are available in the zone. Local ionization smoke detectors are located in the zone to provide early warning alarm to the control room.

Construction

The walls communicating with areas 2-AR-37-107, -109, -73, -75, and -102A except for 102A to room 412 & 413 which are heavy concrete are 3 hour rated. The west wall of the zone is nonrated. All others, including the floor and ceiling are 2 hour rated. There is an open doorway into the Electrical Equipment and Raceway area, 2-AR-50-111B, a concrete hatch into 2-AR-37-102A and 2-AR-63-116 and louvers into 2-AR-50-111B. Doors communicating to other fire areas are 1½ hour rated. The door to -111B is nonrated. Ventilation duct penetration to 102A (room 412/413) is not provided with a fire damper. There are open penetrations in the walls to room 412/413 fire area 2-AR-37-102A.

Licensee Controlled Specification Barrier

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-13, sheet 3.

Conclusions

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

The barriers between 2-AR-50-111A and 3-AR-63-118 and 2-AR-37-102A and 2-AR-63-119 were evaluated. The boundaries and their associated fire protection features were found to be adequate to prevent the propagation of fire between fire areas.

Fire Area 2-AR-50-111 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. 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 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-AR-50-111B

AREA: 2409 sq.ft. **DESCRIPTION:** ELEC EQUIP & RACEWAY AREA

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	80,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	east NR, others 3hr
Floor, Ceiling, Roof	2hr
Penetrations	C
Fixed Openings	OD/111A, louvers/111A
Doors	NR/111A,,

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-AR-50-111B

Location

Auxiliary Radwaste Building - El. 50'-0" - Electrical Equipment and Raceway Area - 2409 sq. ft.

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 80,000 Btu/sq. ft. (Note 1)

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

Design Basis Fire

The design basis fire 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

The zone contains no automatic suppression systems or hose stations. There are portable extinguishers within the zone and adjacent zone. Ionization smoke detectors are located in the zone to provide early warning alarm to the control room.

Construction

The east wall of the zone is of non-rated concrete construction approximately 18 inches thick. All other walls are 3 hour rated. The floor and ceiling are 2 hour rated. There is an open doorway, louvers and a non-rated door communicating with zone 2-AR-50-111A.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-14, 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 fire barriers between 2-AR-50-111B and 3-AR-63-118 and 2-AR-63-119 were evaluated. The barriers and associated fire protection features were found to be adequate to prevent the propagation of fire beyond the area boundaries. The design basis fire is insufficient to breach the barriers defining the zone/fire area.

Appendix R compliance for fire area 2-AR-50-111 is discussed in fire zone 2-AR-50-111A.

FPS **FIRE AREA/ZONE:** 2-AR-63-116

AREA: 21388 sq.ft. **DESCRIPTION:** CORRIDOR & ROOMS

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(3)
Portable Extinguishers	yes
Detectors (type)	ionization,heat detectors partial coverage

FIRE RESISTANCE RATING

Walls	east, west 3B and 121/3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	D, C, P
Fixed Openings	CH/111A,107,109
Doors	A/2-PE-63-3B,A/3-PE-63-3B, (2)A/2-AC-70-,64A,B/2-AR-9-90, B/119,120,86,77,117,118,

HOT STANDBY SYSTEMS	**Equipment**	**Valves**	**Cable**
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			A,B
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A,B,X
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,X

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			B,X
Summary			B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AR-63-116

Location

Auxiliary Radwaste Building - El. 63'-6" - Corridor and Rooms
21388 square feet

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil, grease, cable insulation, Class A combustibles, plastics and other miscellaneous combustibles. The design basis fire is conservatively based on the simultaneous total combustion of all combustibles in the zone.

Fire Protection Equipment

The zone contains no automatic suppression systems. Manual fire fighting equipment such as hose stations and portable extinguishers are available in the zone. Local ionization smoke detectors and heat detectors located in the zone provide early warning alarm to the control room.

Construction

The east and west exterior building walls defining the zone are 3 hour rated as is the wall around 2-AR-63-121. Other walls, including the floor and ceiling, are 2 hour rated. Concrete hatches provide access to adjoining zones 2-AR-50-111A, 2-AR-37-107 and -109. All fire doors leading outside of this zone have a minimum of 1½ hour ratings.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-14, 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. Fixed temperature rate of rise detectors also provide early warning alarm to the control room. The available hose stations and portable equipment are 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 design basis fire is insufficient to breach the barriers defining the zone/fire area.

The barriers between 2-AR-63-116 and 3-AR-63-117 and 3-AR-63-118, 2-AR-63-119 and 2-AR-63-120 were evaluated. The boundaries and their associated fire protection features were found to be adequate to prevent the propagation of fire between fire areas.

Fire Area 2-AR-63-116 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-AR-63-117

AREA: 96 sq.ft. **DESCRIPTION:** DUCT SHAFT 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-AR-63-116
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	south 3hr, others 2hr
Floor, Ceiling, Roof	2hr/floor, HC/roof
Penetrations	C, D, ND/roof
Fixed Openings	none
Doors	B/2-AR-63-116

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			A,B
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,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
Summary			A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-AR-63-117

Location

Auxiliary Radwaste Building - El. 63'-6" - Duct Shaft Room - 96 square feet - Fig. 8-14

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 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 protection or fire detection equipment in this area. Manual fire fighting equipment is available in adjacent area 2-AR-63-116.

Construction

The south wall is reinforced concrete with a 3 hour rating. The north, east, and west walls are 2 hour rated, as is the floor. The ceiling is nonrated reinforced concrete. One 1-1/2 hour rated door allows access to the area from the corridor (2-AR-63-116). 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 8-14, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire. Portable smoke exhaust fans may then be used to vent smoke from the fire area.

The fire boundaries between 3-AR-63-117, 2-AR-9-77 and 2-AR-63-116 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 fire barriers defining the area.

Fire Area 3-AR-63-117 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-AR-63-118

AREA: 560 sq.ft. **DESCRIPTION:** CABLE TRAY 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
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	south and west 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, P, D
Fixed Openings	none
Doors	B/2-AR-63-116

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			A,B,b
Main Feedwater			
Main Steam			
HVAC			A,B,b
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A,B,X
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,b,X

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,X
Summary			A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-AR-63-118

Location

Auxiliary Radwaste Building - El. 63'-6" - Cable Tray Gallery - 560 square feet - Fig. 8-14

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-AR-63-116. Ionization smoke detectors, located in the area, provide early warning alarm in the control room.

Construction

The south and west walls of the area are 3 hour rated reinforced concrete construction. The north and east walls are 2 hour rated, as are the ceiling and floor. One 1-1/2 hour rated door opens to the corridor (2-AR-63-116). 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 8-14, sheet 3.

Cable for the following systems is wrapped:

Chemical & Volume Control - Train B
HVAC (Charging Pump Rooms) - Train B

Conclusions

The ionization detectors 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 equipment is adequate to extinguish the fire. In the event the fire achieves sufficient intensity, the water spray system will actuate automatically to control and 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-AR-63-118 and 2-AR-63-116, 2-AR-50-111A and 2-AR-50-111B 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-AR-63-118 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-AR-63-119

AREA: 560 sq.ft. **DESCRIPTION:** CABLE TRAY 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
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

Walls	north and west 3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C, P, D
Fixed Openings	none
Doors	B/2-AR-63-116,,

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			A,B,b
Main Feedwater			
Main Steam			
HVAC			A,B,b
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water			A,B,X
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,b,X

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,X
Summary			A,B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 2-AR-63-119

Location

Auxiliary Radwaste Building - El. 63'-6" - Cable Tray Gallery - 560 square feet - Fig. 8-14

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. Manual fire fighting equipment is available within the area and in adjacent area 2-AR-63-116. Ionization smoke detectors, located in the area, provide early warning alarm in the control room.

Construction

The north and west walls of the area are 3 hour rated reinforced concrete construction. The south and east walls are 2 hour rated, as are the ceiling and floor. One 1-1/2 hour rated door opens to the corridor (2-AR-63-116). 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 8-14, sheet 3.

Cable for the following systems is wrapped:

Chemical & Volume Control - Train B
HVAC (Charging Pump Rooms) - Train B

Conclusions

The ionization detectors are expected to detect the products of combustion from an incipient fire and alert the control room for prompt response by the fire department. Portable equipment, available in the area and adjacent areas, is adequate to extinguish the fire. In the event the fire achieves sufficient intensity, the water spray system will actuate automatically to control and 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-AR-63-119 and 2-AR-63-116, 2-AR-50-111A and 2-AR-50-111B 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-AR-63-119 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train B systems. Some CVCS and HVAC cables in the area have been wrapped. 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 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-AR-63-120

AREA: 96 sq.ft. **DESCRIPTION:** DUCT SHAFT 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-AR-63-116
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north 3hr, others 2hr
Floor, Ceiling, Roof	2hr floor, HC roof
Penetrations	C, D, ND/roof
Fixed Openings	none
Doors	B/2-AR-63-116,,

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

	Equipment	Valves	Cable
Shutdown Cooling			
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			A
Summary			A

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 2-AR-63-120

Location

Auxiliary Radwaste Building - El. 63'-6" - Duct Shaft Room - 96 square feet - Fig. 8-14

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 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 within the area. Manual fire fighting equipment is available in adjacent area 2-AR-63-116.

Construction

The north wall of the area is 3 hour rated reinforced concrete construction. The south, east, and west walls are 2 hour rated, as is the floor. The ceiling is also constructed of heavy reinforced concrete but is not rated. One 1-1/2 hour rated door opens to the corridor (2-AR-63-116). There is no supplied ventilation. The 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 8-14, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 2-AR-63-120, 2-AR-63-116 and 2-AR-9-86 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 fire barriers defining the area.

Fire Area 2-AR-63-120 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-AR-63-121

AREA: 831 sq.ft. **DESCRIPTION:** TANK ROOMS

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	3hr
Floor, Ceiling, Roof	2hr
Penetrations	P
Fixed Openings	CH/roof
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-AR-68-178A

AREA: 9080 sq.ft. **DESCRIPTION:** PERSONNEL FACILITY 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 sprinkler rm 624, 625, 626, 627, 628
Hose Stations	2
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr/123, 116, 2hr/2-3B, 3-3B, 178B, NR/ext.
Floor, Ceiling, Roof	2hr floor, NR roof
Penetrations	none
Fixed Openings	C,P
Doors	(2) A/2-PE-63-3B, (2) A/3-PE-63-3B,(4) B/2-AR-68-178B,

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-AR-68-178B

AREA: 1465 sq.ft. **DESCRIPTION:** HOT AND COLD DRY CLEAN 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 sprinkler, rm 629, 630
Hose Stations	none
Portable Extinguishers	yes
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	2hr/178A, 3hr/3-123, NR/ext
Floor, Ceiling, Roof	2hr floor, NR roof
Penetrations	C,P
Fixed Openings	none
Doors	(4)B/2-AR-68-178A, (1)B/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

Section YD
Tab

UNITS 2/3 YARD AREA

A) Inside the Protected Area

The Units 2/3 yard area (2-YD-30-200) is an exposed fire area bounded by the protected area fence. Most walls of the fire areas/zones which communicate with the yard area are heavy concrete, some of which are 2 or 3 hour rated. The fire area is divided into two (2) fire zones:

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

The yard area includes roof of Auxiliary Control, Radwaste, and Penetration Buildings.

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

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

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

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

B) Outside the Protected Area

The South Yard Facility yard area (2-YD-80-300) is an exposed fire area bounded by the property line to the south and west, the service road to the east and the facility control fence to the north. No boundaries communicate with any other fire area. The following facilities are located in the fire area:

- Shops Building
- Hazardous Material Pad
- Multi-Purpose Handling Facility (MPHF)

This fire area contains no safety related or safe shutdown equipment.

UNITS 2/3 YARD AREA

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

- Portable extinguishers
- Wet pipe sprinkler systems
- Pre-action sprinkler system
- Halon system
- Ionization and linear beam fire detection
- Fire hydrants

Because the fire area does not contain safety related or safe shutdown equipment, the fire protection/detection equipment identified above may not meet the specific requirements of BTP 9.5-1, Appendix A. Fire protection features have been provided based on NEIL Property Loss Prevention Standards and engineering judgement. It should also be noted that the fire protection features noted in section 3.0 do not apply to this fire area. The fire alarm and suppression systems are not tied into the fire protection features provided within the Protected Area.

This fire area is utilized for the staging of low level contaminated waste and contains work areas for maintenance of contaminated equipment. A calculation has been performed to verify that radiological releases resulting from the potential fire would not exceed the site boundary limits.

The buildings within Fire Area 2-YD-80-300 house varying degrees of hazards and combustible loading. The fire area does not border any other fire areas. Thus, a fire in the South Yard Facility will have no impact on plant safety related or safe shutdown equipment. Because of the large area of 2-YD-80-300, the transient nature of the significant hazards, and the lack of physical walls bounding the fire area, Maximum Permissible Fire Loading and Fixed Fire Loading are not identified. Fixed fire suppression systems were provided based on occupancy classifications as defined in NFPA 13. The occupancy classification for the Multi-Purpose Handling Facility (MPHF) and shops building is "ordinary hazard, group 2". The hazardous materials pad and mixed waste processing facility (inside South Yard Facility (SYF) Shops Building) are considered an "extra hazard" occupancies. Combustible hazards added to these areas should be assessed as to the fire protection systems ability to control the increased hazard.

FIRE AREA/ZONE	CONTAINS SAFE SHUTDOWN EQUIPMENT/CABLES	CONTAINS SAFETY RELATED EQUIPMENT/CABLES	FIGURE NO.
2-YD-30-200A	Yes	Yes	8-26A
2-YD-30-200B	Yes	Yes	8-26A
2-YD-80-300	No	No	8-26B

FPS **FIRE AREA/ZONE:** 2-YD-30-200A

AREA: 170000 sq.ft. **DESCRIPTION:** YARD AREA UNIT 2

DESIGN BASIS FIRE

Fire Loading Category:

Fire Loading - Max Permiss (SEE TEXT)

FIRE PROTECTION (AVAILABLE)

Suppression (type)	water spray, wet pipe, halon/See Text
Hose Stations	hydrants in yard
Portable Extinguishers	yes
Detectors (type)	thermal/Lube Oil Tank Area,inonization/STA trailer

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

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

Location

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

Fire Loading

Fire loading category - See Note 1.
Maximum permissible fire loading - See Note 1

Note 1: In-situ combustible loadings in the Yard Area are localized and removed from the vicinity of safe shutdown equipment in the area. The Yard area encompasses large, open areas along with several structures. Areas with high localized combustible loadings are provided with suppression, detection, containment fire protection features, as needed or are adequately isolated. In addition, administrative controls are instituted which routinely inspect for excessive transient combustibles above the administratively controlled limits, and compensatory measures are taken, if required.

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

Note 3: 52,925 lbs added to miscellaneous Class A Combustibles for outage control center (7.3 lb/ft^2) per NFPA Fire Protection Handbook Table 7-9C, 16th Edition. 52,925 lbs were added under wood in FPS to document the miscellaneous combustibles.

Design Basis Fire

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

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

Fire Protection Equipment

Thermal detectors are located over the clean and dirty lube oil tanks. Detector actuation results in control room and E.S.O. office annunciation and actuation of an automatic water spray system, providing local coverage for the lube oil tanks.

Wet pipe sprinkler systems are located over the occupant buildings in the yard area. These are charged, fusible link systems. A halon system is installed in building B-67.

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

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

Construction

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

Licensee Controlled Specification Barriers

For area/zone barriers requiring surveillance per LCS 3.7.104 refer to the latest revisions of Figure 8-1 through 8-26, Sheet 3.

Conclusion

The Unit 2 yard area is open to the atmosphere. Therefore, unlimited ventilation is provided to disperse heat and combustion by-products.

Sources of high combustible loadings in the area are provided with detection, suppression, or flammable/combustible material containment features to minimize their effect. Combustible Control Zones have been established at certain location in the yard area. These zones, which limit the combustibles allowed within 20 feet of a given wall or ensure that a continuous path of combustibles does not exist between duct banks and/or manholes containing redundant safety shutdown cables are shown in Section 8.0 on the Licensee Controlled Specification Barrier drawings.

The barriers for fire zones which communicate with the yard have been evaluated and found to be adequate to prevent propagation of a yard fire into those adjacent zones containing redundant safe shutdown equipment.

Fire Area 2-YD-30-200 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or B systems. Physically separated functionally redundant components 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. A deviation from Appendix R, Section III.G.2 has been approved by the NRC for separation of redundant cabling in yard area manholes.

FPS **FIRE AREA/ZONE:** 2-YD-30-200B

AREA: 197416 sq.ft. **DESCRIPTION:** YARD AREA UNIT 3

DESIGN BASIS FIRE

Fire Loading Category:

Fire Loading - Max Permiss (SEE TEXT)

FIRE PROTECTION (AVAILABLE)

Suppression (type)	SPRINKLERS/SERVICES BLDG
Hose Stations	hydrants in yard
Portable Extinguishers	yes
Detectors (type)	VARIOUS IN OFFICES

FIRE RESISTANCE RATING

Walls	HC, 1hr/153 2hr/128, 150, 173, 3hr/See Text
Floor, Ceiling, Roof	no roof, ground, 2hr/159, 160, NR/145B
Penetrations	P, C, D, NP, NC, ND, NC/142B
Fixed Openings	CH, louvers, M, OP, OH, MH/See Text
Doors	L/24, 75; NR/102A, 127, 128, 153, 164; (2)NR/148A,161A; ,X/156, 157; A/171; X/171

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

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

Location

Yard - El. 30'-0" - Yard Area - 197,416 sq ft - Fig. 8-26A.

Fire loading category - See Note 1
Maximum permissible fire loading - See Note 1

Note 1: In-situ combustible loadings are localized and removed from the vicinity of safe shutdown equipment in the area. The Yard area encompasses large, open areas along with several structures. Areas with high localized combustible loadings are provided with suppression, detection, containment fire protection features, as needed, or are adequately isolated. In addition, administrative controls are instituted which routinely inspect for excessive transient combustibles above the administratively controlled limits, and compensatory measures are taken, if required.

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

Design Basis Fire

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

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

Fire Protection Equipment

Sprinklers are provided for services bldg. Remote alarms are indicated at ESO office via ADT.

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

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

Construction

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

Licensee Controlled Specification Barriers

For area/zone barriers requiring surveillance per LCS 3.7.104 refer to the latest revisions of Figure 8-1 through 8-26, Sheet 3.

Conclusions

The Unit 3 yard area is open to the atmosphere. Therefore, unlimited ventilation is provided to dispense heat and combustion by-products.

Sources of high combustible loadings in the area are provided with detection, suppression, or flammable/combustible material containment features to minimize their effect.

Combustible Control Zones have been established throughout the yard area. These zones, which limit the combustibles allowed within 20 feet of a given wall or ensure that a continuous path of combustibles does not exist between duct banks and/or manholes containing redundant safe shutdown cables are shown in Section 8.0 on the Licensee Controlled Specification Barrier drawings.

The barriers for fire zones which communicate with the yard which contain safe shutdown components have been evaluated and found to be adequate to prevent propagation of a yard fire into the zone.

Appendix R compliance for fire area 2-YD-30-200 is discussed in fire zone 2-YD-30-200A.

FPS **FIRE AREA/ZONE:** 2-YD-80-300

AREA: 0 sq.ft. **DESCRIPTION:** SOUTH YARD FACILITY

DESIGN BASIS FIRE

Fire Loading Category:

Fire Loading - Max Permiss 80,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type) WET PIPE, PRE ACTION, HALON

Hose Stations NONE

Portable Extinguishers YES

Detectors (type) IONIZATION, LINEAR BEAM

FIRE RESISTANCE RATING

Walls NR

Floor, Ceiling, Roof NR

Penetrations NR

Fixed Openings OP

Doors NR

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

Section 3CO
Tab

UNIT 3 CONTAINMENT BUILDING

The Unit 3 containment building is a reinforced concrete structure which houses the reactor, the steam generators, the reactor coolant pumps, the reactor coolant system, and other required support systems. The building is divided into three (3) fire areas. The barrier, penetration and door ratings are noted in the matrices.

The containment building contains part of or all of the following systems, which can be used for, or support, safe shutdown and cooldown:

- Essential Electric System
- Reactor Coolant
- Shutdown Cooling
- Chemical and Volume Control
- Main Steam
- HVAC

The types of fire protection/detection equipment in or near the building consist of the following:

- Portable extinguishers.
- A seismic standpipe system with manual hose stations.
- Smoke and fixed temperature rate of rise heat detectors.
- Manual water spray systems are provided for the charcoal filter units. Heat sensors installed in the filters provide control room alarm on high temperature.
- Semi-automatic water spray systems are provided for the reactor coolant pumps.
- Reactor coolant pump lube oil collection system.

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
3-CO-15-1A	Yes	Yes	8-27, 8-28, 8-29, 8-30
3-CO-15-1B	Yes	Yes	8-27, 8-28, 8-29, 8-30
3-CO-15-1C	Yes	Yes	8-27, 8-28, 8-29
3-CO-63-1D	Yes	Yes	8-30
3-CO-15-167	No	No	8-27, 8-28, 8-29, 8-30
3-CO-15-168	No	No	8-27, 8-28, 8-29, 8-30

FPS **FIRE AREA/ZONE:** 3-CO-15-1A

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

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	80,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N,B		A,B, B*
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)	N,B		A,B,B*

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

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

Location

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

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 80,000 Btu/sq. ft. (Note 1)

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

Design Basis Fire

The design basis fire is postulated to be a fire that would involve mostly cable insulation, oil normally contained within the two reactor coolant pumps and their associated surge capacitors located in the zone, or plastic.

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

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

Fire Protection Equipment

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

Construction

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

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-27, 8-28, 8-29, and 8-30, sheet 3/4.

Conclusions

The fixed temperature rate of rise heat detectors are expected to detect the fire in its initial stages of growth, and alarm in the control room. A fire water main containment isolation valve will then be opened by a remote manual switch in the control room, and water will flow automatically to the correct water spray system to control and extinguish the fire.

Reactor coolant pumps are provided with a lube oil collection system designed to collect oil and prevent it from coming into contact with high temperature components. The system is designed to ensure that it will not structurally fail and unacceptably interact with safety related structures, systems or components.

Portable extinguishers and hose stations located in adjacent zone 3-CO-15-1C provide suppression capability.

In the event the normal purge and/or mini-purge systems are damaged by fire, the smoke associated with such a fire would naturally rise and collect in the upper portions of the containment dome. This would enable the fire department to access and mitigate the fire without being unduly hampered by smoke.

The substantial construction of the heavy concrete walls is sufficient to prevent the propagation of a fire beyond the boundaries of the fire zone.

Fire Area 3-CO-15-1 Appendix R Compliance

Safe shutdown for a fire in Fire Area 2-CO-15-1 will be provided by utilizing Train A or 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.d. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.d has been accepted for cables and equipment not consistent with the 20 foot separation with no intervening combustibles rule. 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-CO-15-1B

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

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	80,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant	N,A,B		A*,B*,A,B
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume 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)	N,A,B		A*,B*,A,B

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

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

Location

Containment Building - El. 17'-2" - Generator Room #1 - 1399 square feet - Figures 8-27, 8-28, 8-29, 8-30

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 80,000 Btu/sq. ft.

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, oil normally contained within the two reactor coolant pumps and their associated surge capacitors, or plastic.

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

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

Fire Protection Equipment

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

Construction

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

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-27, 8-28, 8-29, and 8-30, sheet 3/4.

Conclusions

The fixed temperature rate of rise heat detectors are expected to detect the fire in its initial stages of growth, and alarm in the control room. A fire water main containment isolation valve will then be opened by a remote manual switch in the control room, and water will flow automatically to the correct water spray system to control and extinguish the fire.

Reactor coolant pumps are provided with a lube oil collection system designed to collect oil and prevent it from coming into contact with high temperature components. The system is designed to ensure that it will not structurally fail and unacceptably interact with safety related structures, systems or components.

Portable extinguishers and hose stations located in adjacent zone 3-CO-15-1C provide suppression capability.

In the event the normal purge and/or mini-purge systems are damaged by fire, the smoke associated with such a fire would naturally rise and collect in the upper portions of the containment dome. This would enable the fire department to access and mitigate the fire without being unduly hampered by smoke.

The substantial construction of the heavy concrete walls is sufficient to prevent the propagation of a fire beyond the boundaries of the fire zone.

Appendix R compliance for fire area 3-CO-15-1 is discussed in fire zone 3-CO-15-1A.

FPS **FIRE AREA/ZONE:** 3-CO-15-1C

AREA: 11903 sq.ft. **DESCRIPTION:** CONTAINMENT AREA QUADRANTS 1,2,3,4

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	80,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray sys for charcoal
Hose Stations	(9) seismic
Portable Extinguishers	yes
Detectors (type)	ionization(partial),temp.detector for char

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

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

Location

Containment Building - El. 17'-2" - Containment Area Quadrants 1, 2, 3, 4 - 11,903 square feet - Figures 8-27, 8-28, 8-29

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 80,000 Btu/sq. ft. (Note 1)

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

Design Basis Fire

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

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

The fire loading is conservatively based on the simultaneous total combustion of all combustibles in the zone. Due to the total enclosure of the charcoal within the charcoal filters of the recirculation unit and the physical separation of the redundant trains of cabling, the maximum credible fire will involve either charcoal or one train of cabling.

Fire Protection Equipment

A manual water spray system is provided for the charcoal filters of the recirculation filtration unit. A temperature detector is installed within the filtration units to alarm the control room on high temperature. Manual fire fighting equipment is available within the zone. Ionization smoke detectors provide an early warning alarm in the control room.

Construction

The zone boundaries are heavy concrete with an approximate thickness of 48 inches. Three 1-1/2 hour doors separate the area from the stairwell (3-CO-15-168). Three 1-1/2 hour rated doors open to the elevator (3-CO-15-167).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-27, 8-28 and 8-29, sheet 3/4.

Conclusions

Fixed combustibles within the zone are limited to cable and charcoal which is entirely contained within the recirculation unit charcoal filter.

In the event of a fire in the charcoal filter, the temperature detector installed in the filters is expected to alarm high temperature in the control room. The operator will open the motor operated valve to pressurize the water spray system. At the same time, the operator will send personnel inside the containment to position the charcoal filter OS&Y valve to initiate flow and extinguish the fire.

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

The high voltage ionization detectors provided at the 30' and 45' containment levels are expected to detect the products of combustion due to a cable fire and alert the control room.

In the event the normal purge and/or mini-purge systems are damaged by fire, the smoke associated with such a fire would naturally rise and collect in the upper portions of the containment dome. This would enable the fire department to access and mitigate the fire without being unduly hampered by smoke.

Appendix R compliance for fire area 3-CO-15-1 is discussed in fire zone 3-CO-15-1A.

FPS **FIRE AREA/ZONE:** 3-CO-63-1D

AREA: 14185 sq.ft. **DESCRIPTION:** OPERATING FLOOR

DESIGN BASIS FIRE

Fire Loading Category:	Low
Fire Loading - Max Permiss	80,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	(3) seismic
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-CO-63-1D

Location

Containment Building - El. 63'-6" - Operating Floor - 14,185 square feet - Figure 8-30

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 80,000 BTU's/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, oil and grease, and plastic. Transient fire loads in this area are not credible when the plant is at power.

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

Fire Protection Equipment

Manual fire fighting equipment is available within the zone. Ionization smoke detectors, located within the zone, provide early warning alarm in the control room.

Construction

The zone boundaries are heavy concrete with an approximate thickness of 48 inches. The zone communicates with the stairwell (3-CO-15-168) and the elevator (3-CO-15-167) through 1-1/2 hour rated doors.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-30, sheet 3.

Conclusions

The ionization detectors are expected to detect the products of combustion of an incipient fire and alert the control room.

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

In the event the normal purge and/or mini-purge systems are damaged by fire, the smoke associated with such a fire would naturally rise and collect in the upper portions of the containment dome. This would enable the fire department to access and mitigate the fire without being unduly hampered by smoke.

The low fire loading and the substantial construction of the heavy concrete walls and floor preclude the propagation of the fire beyond the boundaries defining the fire zone.

Appendix R compliance for fire area 3-CO-15-1 is discussed in fire zone 3-CO-15-1A.

FPS **FIRE AREA/ZONE:** 3-CO-15-167

AREA: 64 sq.ft. **DESCRIPTION:** ELEVATOR 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, seismic in 3-CO-15-1C & 3-CO-63-1D
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization in machine room

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	HC
Penetrations	none
Fixed Openings	none
Doors	(3)B/3-CO-15-1C,B/3-CO-63-1D,,X/3-CO-15-168

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:** 3-CO-15-168

AREA: 136 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, seismic in 3-CO-15-1C & 3-CO-63-1D
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	2hr
Floor, Ceiling, Roof	HC
Penetrations	C
Fixed Openings	none
Doors	(3)B/3-CO-15-1C,B/3-CO-63-1D,,X/3-CO-15-167

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

Section 3PE
Tab

UNIT 3 PENETRATION BUILDING

The Unit 3 Penetration Building is a reinforced concrete structure that contains piping and electrical penetration areas. The barrier, penetration and door ratings are noted in the matrices. The Penetration Building is divided into two (2) fire areas..

The Penetration Building contains part of or all of the following systems, which can be used for, or support, safe shutdown and cooldown:

- Reactor Coolant
- Shutdown Cooling
- Chemical and Volume Control
- Main Steam
- HVAC
- Component Cooling Water
- Emergency Chilled Water
- Diesel Generator Systems
- Essential Electric Systems

The types of protection/detection equipment available in or near this building consists of the following:

- Portable extinguishers.
- Smoke detectors.
- A seismic standpipe system with manual hose stations.
- Manual water spray systems are provided for the charcoal filter units. Heat sensors, installed in the units, provide control room alarm on high temperature.

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
3-PE-9-2A	Yes	Yes	8-27
3-PE-(-18)-2B	Yes	Yes	8-27, 8-31
3-PE-30-2C	Yes	Yes	8-28
3-PE-30-2D	Yes	Yes	8-28
3-PE-45-3A	Yes	Yes	8-29
3-PE-63-3B	Yes	Yes	8-30

FPS **FIRE AREA/ZONE:** 3-PE-9-2A

AREA: 7738 sq.ft. **DESCRIPTION:** PIPING AREA

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 2-AR-9-76
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC/containment, 75, 2B, 3hr/others
Floor, Ceiling, Roof	HC/floor grade 2C, others/2hr
Penetrations	D, C, P, SG, ND/2C, QP/94, QP/75
Fixed Openings	OP/2B, MH/2C, OH/2C, OS/2C, OD/2B
Doors	W/3-TB-8-148G, A/2-AR-9-76,,A/3-FH-15-124, A/3-FH-17-122

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

FIRE AREA/ZONE 3-PE-9-2A

Location

Penetration Building - El. 9'-0" - Piping Area - 7738 square feet - Figures 8-27

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 hydraulic fluid, rubber, and Class A combustibles.

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 within the zone or in adjacent area 2-AR-9-76. Ionization smoke detectors, located within the zone, provide early warning alarm in the control room.

Construction

Heavy concrete walls separates this zone from containment. The walls adjoining 3-PE-(-18)-2B and 3-AR-9-75 are nonrated heavy concrete. The remainder of the zone walls are 3 hour rated. The ceiling to 3-PE-30-2C is nonrated heavy concrete construction. The remainder of the ceiling is 2 hour rated. An open stairwell leads to zone 3-PE-30-2C above. The floor to grade is nonrated heavy concrete construction. Two 3 hour rated doors communicate with the fuel handling building (3-FH-17-122 and 3-FH-15-124). The area is separated from the the auxiliary radwaste building (2-AR-9-76) by a 3 hour rated door. A watertight door opens to adjacent zone 3-TB-8-148G. The zone communicates with adjacent zone 3-PE-(-18)-2B through a gate and an opening (at the west end of the penetration building) in the barrier between the two zones. There is a qualified penetration seal between this zone and 3-AR-9-75. The barrier between these two areas is part of a double wall configuration. The qualified seal is on the 3-AR-9-75 side of the double wall and the 2A side is unsealed.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-27, 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 fire boundaries between 3-PE-9-2A and 3-AR-9-75, 2-AR-24-94, 3-TB-8-148G, and 3-FH-30-128 have been evaluated. The fire boundaries and associated fire protection features were found to be adequate to prevent the propagation of the fire beyond the fire boundaries.

Fire Area 3-PE-(-18)-2 Appendix R Compliance

Safe shutdown capability for a fire in Fire Area 3-PE-(-18)-2 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.a.

FPS **FIRE AREA/ZONE:** 3-PE-(-18)-2B

AREA: 3418 sq.ft. **DESCRIPTION:** PIPING AREA

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	3hr/94, HC/others
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C, SG
Fixed Openings	OD/2A, OP/2A, OP/136, OP/137C, MH/135A
Doors	none

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

FIRE AREA/ZONE 3-PE-(-18)-2B

Location

Penetration Building - El. (-18'-0") - Piping Area - 3418 square feet - Figures 8-27, 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 expected to occur in this area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

Manual fire fighting equipment is available within the zone. Ionization smoke detectors, located within the zone, provide early warning alarm in the control room.

Construction

The walls defining the zone are nonrated reinforced concrete construction with an approximate thickness of 24 inches except for the barrier to 2-AR-24-94 which is 3 hour rated. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. The zone communicates with adjacent zone 3-PE-9-2A through a gate and an opening (at the west end of the penetration building) in the barrier separating the two zones. There are no ventilation duct penetrations. The wall between the zone and 3-SE-(-5)-135A is part of a double wall configuration. Penetrations between the zone and 3-SE-(-5)-135A are sealed on the 135A side of the double wall and are unsealed on the 2B side.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-27 and 8-31, sheet 3.

Conclusions

Ionization detection is available and provides early alarm in the control room. Portable suppression equipment is available in the zone.

The minimal fire loading and the substantial construction of the heavy concrete walls preclude the propagation of a transient combustible fire beyond the boundaries defining the zone.

The fire boundaries between 3-PE-(-18)-2B and 3-SE-(-5)-135A, 3-SE-(-15)-136 and 3-SE-(-15)-137C and 3-TB-8-148G 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.

FIRE AREA/ZONE 3-PE-(-18)-2B

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

Appendix R compliance for fire area 3-PE-(-18)-2 is discussed in fire zone 3-PE-9-2A.

FPS **FIRE AREA/ZONE:** 3-PE-30-2C

AREA: 5556 sq.ft. **DESCRIPTION:** PIPING AREA

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray for charcoal
Hose Stations	none
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC/containment, 2D, 75, 3hr/others
Floor, Ceiling, Roof	2hr, HC/2A
Penetrations	D, P, C, SG, ND/2A, QP/75
Fixed Openings	MH/2A, OH/2A, OS/2A, OD/2D
Doors	A/3-AC-30-21, A/3-FH-30-126,,A/3-FH-30-128

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIÁL 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,X
Summary		A,B,C,D,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

FIRE AREA/ZONE 3-PE-30-2C

Location

Penetration Building - El. 30'-0" - Piping Area - 5556 square feet - Figures 8-28

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 Class A combustibles, plastic, rubber, hydraulic fluid, and charcoal.

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

Fire Protection Equipment

A manual water spray system is provided for the charcoal filter. In addition, manual fire fighting equipment is available within the zone. A temperature detector is installed within the filter units to alarm the control room on high temperature. Ionization smoke detectors, located within the zone, provide early warning alarm in the control room.

Construction

The walls of the zone to adjacent fire areas are reinforced concrete with a 3 hour rating. The wall to 3-AR-9-75 is part of a double wall configuration and the penetration building side is nonrated on this elevation. The penetration through the wall is sealed on the 3-AR-9-75 side of the double wall and is unsealed on the 2C side. A heavy concrete wall with an approximate thickness of 48 inches, separates this area from containment. A nonrated heavy concrete wall also separates this zone from 3-PE-30-2D. The ceiling is 2 hour rated. The floor from 3-PE-30-2C to 3-PE-9-2A is nonrated but floors to other fire areas are 2 hour rated. An open stairwell leads to zone 3-PE-9-2A below. Two 3 hour rated doors communicate with the fuel handling building (3-FH-30-126 and 3-FH-30-128). The zone communicates with the auxiliary control building (3-AC-30-21) through a 3 hour rated door.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-28, sheet 3.

Conclusions

In the event of a fire in the charcoal filters, the temperature detector installed within the filter is expected to alarm high temperature in the control room. Manual operation of the deluge valve will provide water spray directly on the charcoal filters to extinguish the fire.

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

The fire boundaries between 3-PE-30-2C and 3-AR-9-75, 3-FH-45-131, 2-AR-24-94, and 3-FH-30-128 have been 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.

Appendix R compliance for fire area 3-PE-(-18)-2 is discussed in fire zone 3-PE-9-2A.

FPS **FIRE AREA/ZONE:** 3-PE-30-2D

AREA: 805 sq.ft. **DESCRIPTION:** PIPING AREA

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	HC
Floor, Ceiling, Roof	2hr
Penetrations	P, C, SG
Fixed Openings	OD/2C
Doors	none

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control		A,B,N	A,B
Main Feedwater			
Main Steam		B	B
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		A,B	A,B
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)		A,B,N	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,C,X
Summary			A,B,C,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

Location

Penetration Building - El. 30'-0" - Piping Area - 805 square feet - Figures 8-28

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 expected to occur in this area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

Manual fire fighting equipment is available within the zone and in adjacent zone 3-PE-30-2C. Ionization smoke detectors, located within the zone, provide early warning alarm in the control room.

Construction

The walls defining the zone are nonrated reinforced concrete construction with an approximate thickness of 18 inches. The ceiling and floor are 2 hour rated. The zone is accessed through two open doorways from adjacent zone 3-PE-30-2C.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-28, 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 a transient fire.

The fire boundary between 3-PE-30-2D and 2-AR-24-94 was evaluated. The boundary 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.

Appendix R compliance for fire area 3-PE-(-18)-2 is discussed in fire zone 3-PE-9-2A.

FPS **FIRE AREA/ZONE:** 3-PE-45-3A

AREA: 6415 sq.ft. **DESCRIPTION:** ELECTRICAL PENETRATION AREA

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	(2) seismic
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	YES
Spurious Operation	YES

Location

Penetration Building - El. 45'-0" - Electrical Penetration Area - 6415 square feet - Figures 8-29

Fire Loading

Fire loading category - Low
Maximum permissible fire loading - 160,000 BTU's/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

Manual fire fighting equipment is available within the zone. Ionization smoke detectors located within the zone provide early warning alarm in the control room.

Construction

The walls of the zone adjoining adjacent fire areas are 3 hour rated reinforced concrete. The wall separating the area from containment is nonrated reinforced concrete construction with an approximate thickness of 4 feet. The floor and ceiling of the zone are 2 hour rated, with the exception of the metal hatches covering the tendon access openings to the electrical penetration area above (3-PE-63-3B). The metal hatches and their support framing are protected by 2 hour rated material. The zone communicates with the fuel handling building (3-FH-45-130 and 3-FH-45-131) and the auxiliary control building (3-AC-50-32) through 3 hour rated doors. A bullet-resistant door opens to the roof of the safety equipment building (3-SE-50-146).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-29, 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 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 zone.

The substantial construction of the zone ceiling has been evaluated to be sufficient to prevent the propagation of a fire beyond the barriers of the fire zone boundary.

The barriers between 3-PE-45-3A and 3-PE-63-3B, 3-FH-45-130, 3-FH-63-134 and 3-FH-45-131 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/Zone 3-PE-45-3A 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.a. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.a has been accepted for the use of 2 hour equivalent fire barriers in lieu of 3 hour barriers to separate redundant safe shutdown trains. 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-PE-63-3B

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

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	(2) seismic
Portable Extinguishers	yes
Detectors (type)	ionization

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			B
480 V (AC)			
120 V (AC)			
125 V (DC)			
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 3-PE-63-3B

Location

Penetration Building - El. 63'-6" - Electrical Penetration Area/Personnel Monitor Area - 6415 square feet - Figures 8-30

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 alcohol, plastic, rubber, cable insulation and Class A combustibles.

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 within the zone. Ionization smoke detectors, located throughout the zone, provide early warning alarm in the control room.

Construction

The walls are 3 hour rated except the wall to 2-AR-68-178A which is 2 hour rated. The wall separating the zone from containment is nonrated reinforced concrete construction with an approximate thickness of 4 feet. The floor is 2 hour rated with the exception of the metal hatches covering the tendon access openings to the electrical penetration area below (3-PE-45-3A). These metal hatches and their support framing are protected by 2 hour rated material. Six 3 hour rated doors communicate with the auxiliary control building (3-AC-70-65), the auxiliary radwaste building (2-AR-63-116 and 2-AR-68-178A), and the fuel handling building (3-FH-63-134 and 3-FH-17-123).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-30, 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 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 zone.

The barriers between 3-PE-63-3B and 3-PE-45-3A, 2-AR-68-178A and 3-FH-63-134 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. Detection/suppression systems for this zone were evaluated and determined to be adequate.

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

Fire Area/Zone 3-PE-63-3B 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.a. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.a has been accepted for the use of 2-hour equivalent fire barriers in lieu of 3-hour barriers to separate redundant safe shutdown trains. 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.

Section 3SE
Tab

UNIT 3 SAFETY EQUIPMENT BUILDING

The Unit 3 safety equipment building is a reinforced concrete structure that contains safety-related pump rooms and electrical tunnel areas. The Safety Equipment Building is divided into (13) fire areas. The barrier, penetration and door ratings are noted on the matrices.

The safety equipment building contains part of or all of the following systems, which can be used for, or support, safe shutdown and cooldown:

- Shutdown Cooling
- Auxiliary Feedwater
- Component Cooling Water
- Saltwater Cooling
- HVAC
- Emergency Chilled Water
- Main Steam
- Essential Electric Systems
- Main Feedwater
- Engineered Safety Feature
- Diesel Generator Systems

The types of protection/detection equipment available in or near this building consists of the following:

- Portable extinguishers.
- Smoke and fixed temperature rate of rise heat detectors.
- A standpipe system with manual hose stations.
- A fixed water spray system is provided to protect the electrical tunnel. The detectors used to automatically operate the spray system will be fixed temperature rate-of-rise heat detectors.
- Wet-pipe sprinkler systems.

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
3-SE-(-5)-135A	Yes	Yes	8-31, 8-32
3-SE-(-5)-135B	Yes	Yes	8-31
3-SE-(-5)-135C	Yes	Yes	8-31
3-SE-(-5)-135D	Yes	Yes	8-31
3-SE-(-15)-136	Yes	Yes	8-31, 8-32
3-SE-(-15)-137A	Yes	Yes	8-31
3-SE-(-15)-137B	Yes	Yes	8-31
3-SE-(-15)-137C	Yes	Yes	8-31
3-SE-(-15)-138	Yes	Yes	8-31, 8-32
3-SE-(-15)-139	Yes	Yes	8-31, 8-32
3-SE-8-140A	Yes	Yes	8-32
3-SE-8-140B	Yes	Yes	8-32
3-SE-8-141	Yes	Yes	8-32
3-SE-30-142A	Yes	Yes	8-33, 8-34
3-SE-30-145A	Yes	Yes	8-33
3-SE-25-145B	No	No	8-33, 8-41
3-SE-50-146	No	No	8-34
3-SE-(-12)-170	Yes	Yes	8-27, 8-31
3-SE-30-173	No	No	8-33
3-SE-(-2)-176	No	No	8-32

FPS **FIRE AREA/ZONE:** 3-SE-(-5)-135A

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

DESIGN BASIS FIRE

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

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none @ 5'-3", wet pipe system @ 8'-0
Hose Stations	(1) @ (-5'-3"), (1) @ 8'0"
Portable Extinguishers	yes
Detectors (type)	none

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume Control			
Main Feedwater			
Main Steam			
HVAC			
Auxiliary Feedwater			
Engineered Safety Feature			
Component Cooling Water	N	A,B	A,B,b
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)	N	A,B	A,B,b

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-SE-(-5)-135A

Location

Safety Equipment Building - El. (-5'-3") - Piping Room/Heat Exchanger Room - 7285 square feet - Figures 8-31, 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 rubber, plastic, and cable insulation.

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

Fire Protection Equipment

The zone contains an automatic wet pipe sprinkler system at el. 8' 0". In addition, manual fire fighting equipment is available at both el. 8'-0" and el. (-5'-3").

Construction

The walls of the zone are reinforced concrete with a 3 hour rating with the exception of the wall to 3-SE-8-141 which is nonrated reinforced concrete construction with an approximate thickness of 20 inches. The ceiling and floor to other fire areas/zones are 2 hour rated. The floor to grade is nonrated heavy concrete construction. At the (-5'-3") elevation, three nonrated watertight doors communicate with the pump rooms (3-SE-(-5)-135B, 3-SE-(-5)-135C, and 3-SE-(-5)-135D). At the 8'-0" elevation, three nonrated watertight doors separate the zone from the turbine building (3-TB-7-148A and 3-TB-8-148G), and one watertight door communicates with the adjacent A/C room (3-SE-(-15)-136).

Watertight hatches in the floor at elevation 8'-0" communicate with the pump rooms below. The duct penetrations 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 revisions of Figures 8-31 and 8-32, sheet 3.

Cable for the following system is wrapped:

Component Cooling Water - Train B

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 3-SE-(-5)-135A and 3-SE-(-5)-135B, 3-SE-(-5)-135D, 3-TB-8-148G, 3-PE-(-18)-2B, 3-SE-(-15)-136, 3-SE-8-141 and 3-TB-7-148A 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 low fire loading and the substantial construction of the barriers and nonrated doors preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Fire Area 3-SE-(-5)-135 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.b and c. A deviation from the requirements of 10CFR50 Appendix R, III.G.2 has been accepted for fire area 3-135 where redundant safe shutdown equipment is located, but area wide fire detection and suppression systems are not installed. The barriers between zones within the fire area have been upgraded to 3 hours (walls) and 2 hours (floor/ceiling). 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-SE-(-5)-135B

AREA: 700 sq.ft. **DESCRIPTION:** TRAIN B CCW PUMP ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 3-SE-(-5)-135A
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	P, C, QP/135C, QP/135A
Fixed Openings	MH/135A
Doors	W/3-SE-(-5)-135A

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	B	B	A,B
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	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
Summary			A,B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-SE-(-5)-135B

Location

Safety Equipment Building - El. (-5'-3") - Train B CCW Pump Room - 700 square feet - Figures 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the zone. Manual fire fighting equipment is available in adjacent zone 3-SE-(-5)-135A. An ionization smoke detector provides early warning alarm in the control room.

Construction

The walls of the zone are reinforced concrete with a 3 hour rating. The ceiling and floor to other fire areas/zones are 2 hour rated. The floor to grade is nonrated heavy concrete construction. A nonrated watertight door allows access to the zone from 3-SE-(-5)- 135A. A watertight hatch in the ceiling communicates with the piping rooms above (3-SE-(-5)-135A).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-31, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

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 available portable equipment is adequate to extinguish the fire.

The fire boundaries between 3-SE-(-5)-135B and 3-SE-(-5)-135A and 3-SE-(-5)-135C 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 low fire loading and the substantial construction of the barriers and watertight door preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Appendix R compliance for fire area 3-SE-(-5)-135 is discussed in fire zone 3-SE-(-5)-135A.

FPS **FIRE AREA/ZONE:** 3-SE-(-5)-135C

AREA: 700 sq.ft. **DESCRIPTION:** SPARE CCW PUMP ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 3-SE-(-5)-135A
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr, HC/floor grade
Penetrations	P, C, QP/135D, QP/135B, QP/137C
Fixed Openings	MH/135A
Doors	W/3-SE-(-5)-135A

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	A/B	A	A,B
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	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
Summary			A,B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-SE-(-5)-135C

Location

Safety Equipment Building - El. (-5'-3") - Spare CCW Pump Room - 700 square feet - Figures 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the zone. Manual fire fighting equipment is available in adjacent zone 3-SE-(-5)-135A. An ionization smoke detector provides early warning alarm in the control room.

Construction

The walls defining the zone are 3 hour rated reinforced concrete with an approximate thickness of 20 inches. The ceiling and floor to other fire areas/zones are 2 hour rated. The floor to grade is nonrated heavy concrete construction. A watertight door allows access to the area from the piping room (3-SE-(-5)-135A). A watertight hatch in the ceiling communicates with the piping rooms above (3-SE-(-5)-135A).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-31, 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 available portable equipment is adequate to extinguish the fire.

Portable exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 3-SE-(-5)-135C, 3-SE-(-5)-135B, 3-SE-(-5)-135D and 3-SE-(-15)-137C 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 low fire loading and the substantial construction of the barriers and watertight door preclude the propagation of the design basis fire beyond the boundaries of the zone.

Appendix R compliance for fire area 3-SE-(-5)-135 is discussed in fire zone 3-SE-(-5)-135A.

FPS **FIRE AREA/ZONE:** 3-SE-(-5)-135D

AREA: 600 sq.ft. **DESCRIPTION:** TRAIN A PUMP ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 3-SE-(-5)-135A
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C, QP/135C
Fixed Openings	MH/135A
Doors	W/3-SE-(-5)-135A

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	A		A
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

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 3-SE-(-5)-135D

Location

Safety Equipment Building - El. (-5'-3") - Train A CCW Pump Room - 600 square feet - Figures 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the zone. Manual fire fighting equipment is available in adjacent zone 3-SE-(-5)-135A. An ionization smoke detector, located within the zone, provides early warning alarm in the control room.

Construction

The walls of the zone are reinforced concrete with a 3 hour rating. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. A watertight door allows access to the area from the piping room (3-SE-(-5)-135A). A watertight hatch in the ceiling communicates with the piping rooms above (3-SE-(-5)-135A).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-31, 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 available portable equipment is adequate to extinguish the fire.

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 3-SE-(-5)-135D and 3-SE-(-5)-135A and 3-SE-(-5)-135C 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 low fire loading and the substantial construction of the barrier and watertight door preclude the propagation of the design basis fire beyond the boundaries of the zone.

Appendix R compliance for fire area 3-SE-(-5)-135 is discussed in fire zone 3-SE-(-5)-135A.

FPS **FIRE AREA/ZONE:** 3-SE-(-15)-136

AREA: 1860 sq.ft. **DESCRIPTION:** STAIRCASE / A/C ROOM

DESIGN BASIS FIRE

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

FIRE PROTECTION (AVAILABLE)

Suppression (type)	wet pipe sprinklers @ el. 8'-0"
Hose Stations	(1) @ 8'-0"
Portable Extinguishers	yes
Detectors (type)	ionization @ 8'-0"

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-SE-(-15)-136

Location

Safety Equipment Building - El. (-15'-0") - Staircase/A.C. Room - 1860 square feet - Figures 8-31, 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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, plastic, rubber, and Class A combustibles.

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 at el. 8'-0". Manual fire fighting equipment is available in the area at the 8'-0" elevation. Ionization smoke detectors, located within the area, provide early warning alarm in the control room.

Construction

The area consists of two levels connected by an open stairwell. The south and west walls as well as the walls adjoining 3-SE-(-5)-135A, 3-SE-(-5)-135B, 3-SE-(-15)-137C and 3-SE-8-141 are 3 hour rated reinforced concrete. The remainder of the area walls are nonrated reinforced concrete construction with an approximate thickness of 20 inches. The barrier to 3-PE-(-18)-2B has an open blockout for pipes and is nonrated. The ceiling is 2 hour rated. The floor to other fire areas is 2 hour rated. The floor to grade is nonrated heavy concrete construction. Hatches in the floor of the area at elevation 8'-0" communicate with the pump rooms (3-SE-(-15)-137A and 3-SE-(-15)-137B) below. Watertight doors separate the area from safety related pump rooms (3-SE-(-15)-137A, 137B, and 137C), the surge tank rooms (3-SE-8-141 and 3-SE-8-140A), the heat exchanger rooms (3-SE-(-15)-138 and 3-SE-(-15)139), the piping room (3-SE-(-5)-135A) and the turbine building (3-TB-7-148A). Ventilation duct penetrations in 3 hour rated walls are provided with 3 hour rated dampers. All other ventilation duct penetrations are provided with 1-1/2 hour rated fire dampers. The seals in technical specification barriers which are not rated consistent with the barrier or whose construction does not support a rating or are unsealed are: NP/138, 139, 140A, and 140B, QP135A, 137C, 141, and 161B.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-31 and 8-32, sheet 3.

Cable for the following system is wrapped:

HVAC - Train B
SDC - Train B

Conclusions

The ionization detectors are expected to detect the products of combustion from an incipient fire for prompt response by the fire department. Portable equipment, available in the area, is adequate to extinguish the fire. In the event the fire achieves sufficient intensity, the wet pipe sprinkler system will actuate automatically to control and 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 fire area 3-SE-(-15)-136 and 3-SE-(-5)-135A, 3-SE-(-15)-137A, 3-SE-(-15)-137B, 3-SE-(-15)-137C, 3-SE-(-15)-138, 3-SE-(-15)-139, 3-SE-8-140A, 3-SE-8-140B, 3-SE-8-141, 3-TB-7-148A and 2-TK-(-2)-161B 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 low fire loading and the substantial construction of the heavy concrete walls and nonrated doors preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-SE-(-15)-136 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 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-SE-(-15)-137A

AREA: 1210 sq.ft. **DESCRIPTION:** SAFETY RELATED PUMP ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none,(1) in 3-SE-(-15)-136
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	137B/HC, others 3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, QC/139, QP/137C
Fixed Openings	CH/136
Doors	W/3-SE-(-15)-136

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	B	A,B,N	A,B
CCW (To SDC)			
HVAC	B		B
Summary (Hot and Cold)	B	A,B,N	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
Summary			A,B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-SE-(-15)-137A

Location

Safety Equipment Building - El. (-15'-0") - Safety Related Pump Room - 1210 square feet - Figures 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 and oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the zone. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. An ionization detector, located within the zone, provides early warning alarm in the control room.

Construction

The walls of the zone are reinforced concrete with a 3 hour rating, except the zone boundary to 3-SE-(-15)-137B which is nonrated reinforced concrete construction with an approximate thickness of 20 inches. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. A watertight door allows access to the zone from the stairwell (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-31, sheet 3.

(Note: 3-SE-(-15)-137A and 3-SE-(-15)-137B are analyzed as a singular area. 3-SE-(-15)-137C is suitably separated from those zones and is analyzed independently.)

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.

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between fire area 3-SE-(-15)-137A and 3-SE-(-15)-137C, 3-SE-(-15)-136 and 3-SE-(-15)-139 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 low fire loading and the substantial construction of the barriers and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Fire Area 3-SE-(-15)-137A/B 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.a. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.a has been accepted for concrete walls not having a 3 hour rating between Train A Safety Related Pump Room 3-SE-(-15)-137C and the Safety Pump Room 3-SE-(-15)-137A and 3-SE-(-15)-137B, and between the Safety Related Pump Room 3-SE-(-15)-137A, -137B and -137C and fire area 3-SE-(-15)-136. The barriers between pump room 137C and 137A and 137C and 136 have been upgraded to 3 hours.

FPS **FIRE AREA/ZONE:** 3-SE-(-15)-137B

AREA: 336 sq.ft. **DESCRIPTION:** SAFETY RELATED PUMP ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 3-SE-(-15)-136
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	137A/HC, others 3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C,
Fixed Openings	CH/136
Doors	W/3-SE-(-15)-136

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 3-SE-(-15)-137B

Location

Safety Equipment Building - El. (-15'-0") - Safety Related Pump Room - 336 square feet - Figures 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the zone. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. An ionization smoke detector, located within the zone, provides early warning alarm in the control room.

Construction

The walls of the zone are reinforced concrete with a 3 hour rating except the zone boundary to 3-SE-(-15)-137A which is nonrated reinforced concrete construction with an approximate thickness of 20 inches. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. A nonrated watertight door allows access to the zone from the stairwell (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-31, 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.

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

FIRE AREA/ZONE 3-SE(-15)-137B

The fire area boundaries between 3-SE-(-15)-137B and 3-SE-(-15)-136 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 low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Appendix R compliance for fire area 3-SE-(-15)-137A/B is discussed in fire zone 3-SE-(-15)-137A.

FPS **FIRE AREA/ZONE:** 3-SE-(-15)-137C

AREA: 920 sq.ft. **DESCRIPTION:** SAFETY RELATED PUMP ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none, (1) in 3-SE-(15)-136
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	2B/HC, others 3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C, QP/137A, QP/135C, QP/136
Fixed Openings	OP/2B, CH/140A
Doors	W/3-SE-(-15)-136

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	A,N	B,N	A,B
CCW (To SDC)			
HVAC	A		A
Summary (Hot and Cold)	A,N	B,N	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
Summary			A,B

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-SE-(-15)-137C

Location

Safety Equipment Building - El. (-15'-0") - Safety Related Pump Room - 920 square feet - Figures 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 oil.

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

Fire Protection Equipment

There is no fire fighting equipment in the zone. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. One ionization smoke detector, located within the zone, provides early warning alarm in the control room.

Construction

The walls of the zone are reinforced concrete with a 3 hour rating with the exception of the wall to 3-PE-(-18)-2B which has a nonrated open blockout for pipes. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. A nonrated watertight door allows access to the zone from the stairwell (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104 refer to the latest revision of Figure 8-31, sheet 3.

(Note: 3-SE-(-15)-137A and 3-SE-(-15)-137B were analyzed as a singular area. 3-SE-(-15)-137C is suitably separated from these zones and is analyzed independently.)

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.

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 3-SE-(-15)-137C and 3-SE-(-15)-137A, 3-SE-(-15)-136, 3-SE-(-5)-135C and 3-SE-8-140A 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 low fire loading and the substantial construction of the barriers and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the zone.

Fire Area 3-SE-(-15)-137C 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 has been evaluated to remain available for safe shutdown in accordance with 10CFR50, Appendix R, III.G.1 and III.G.2.a. A deviation from the requirements of 10CFR50 Appendix R, III.G.2.a has been accepted for concrete walls not having a 3-hour rating between the Train A Safety Related Pump Room (3-SE-(-15)-137C) and the Safety Related Pump Rooms (3-SE-(-15)-137A and 3-SE-(-15)-137B) and between the Safety Related Pump Rooms (3-SE-(-15)-137C) and fire area 3-SE-(-15)-136. The barriers between pump room 137C and 137A and 137C and 136 have been upgraded to a three hour rating.

FPS **FIRE AREA/ZONE:** 3-SE-(-15)-138

AREA: 360 sq.ft. **DESCRIPTION:** HEAT EXCH. ROOM

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, (1) in 3-SE-(-15)-136 @ 8'
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	136/HC, others 3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, QP/139, QP/161B, NP/136
Fixed Openings	CH/145A
Doors	W/3-SE-(-15)-136 (at el. 8'-0")

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	B,N	B	B
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	B,N	B	B

ESSENTIAL ELECTRIC SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

FIRE AREA/ZONE 3-SE-(-15)-138

Location

Safety Equipment Building - El. (-15'-0") - Heat Exchanger Room - 360 square feet - Figures 8-31, 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 equipment in the area. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. No fire detection equipment is provided within the area.

Construction

The walls of the zone are reinforced concrete with a 3 hour rating, except the wall to 3-SE-(-15)-136 which is nonrated reinforced concrete with an approximate thickness of 18 inches. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. Watertight doors communicate with the A/C room (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-31 and 8-32, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between fire area 3-SE-(15)-138 and 3-SE-(-15)-136, 3-SE-(-15)-139, 3-SE-30-145A and 3-TK-(-2)-161B 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 low fire loading and the substantial construction of the barriers and nonrated doors preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-SE-(-15)-138 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-SE-(15)-139

AREA: 360 sq.ft. **DESCRIPTION:** HEAT EXCH. ROOM

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, (1) in 3-SE-(-15)-136 @ 8'
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	136/HC, others 3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C, QP/138, NC/136, NP/136, QC/137A
Fixed Openings	CH/145A
Doors	W/3-SE-(-15)-136 (at el. 8'-0")

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	A,N	A,B	A,B
CCW (To SDC)			
HVAC			
Summary (Hot and Cold)	A,N	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 3-SE-(15)-139

Location

Safety Equipment Building - El. (-15'-0") - Heat Exchanger Room - 360 square feet - Figures 8-31, 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 equipment in the area. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. No fire detection equipment is provided within the area.

Construction

The walls of the area are reinforced concrete with a 3 hour rating, except the wall to 3-SE-(-15)-136 which is nonrated reinforced concrete construction with an approximate thickness of 18 inches. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. A watertight door allows access to the zone from the A/C room (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-31 and 8-32, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between fire area 3-SE-(15)-139 and 3-SE-(-15)-137A, 3-SE-(-15)-136, 3-SE-(-15)-138 and 3-SE-30-145A 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 low fire loading and the substantial construction of the barriers and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-SE-(-15)-139 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-SE-8-140A

AREA: 400 sq.ft. **DESCRIPTION:** SURGE TK. RM.

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, (1) in 3-SE-(-15)-136
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	north,east/3hr, south,west/HC
Floor, Ceiling, Roof	2hr
Penetrations	P, C, NP/136
Fixed Openings	OP/140B, CH/137C
Doors	W/3-SE-(-15)-136

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	N	B	A,B
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)	N	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	YES

FIRE AREA/ZONE 3-SE-8-140A

Location

Safety Equipment Building - El. 8'-0" - Surge Tank Room - 400 square feet - Figures 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 equipment in the zone. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. No fire detection equipment is provided within the zone.

Construction

The north and east walls are reinforced concrete with a 3 hour rating. The west wall is nonrated reinforced concrete construction with an approximate thickness of 12 inches. The south wall, adjoining the chemical storage tank room (3-SE-8-140B), is 3'6" high. The ceiling and floor are 2 hour rated. One nonrated watertight door allows access to the zone from the A/C room (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-32, sheet 3.

Conclusions

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 3-SE-8-140A and 3-SE-(-15)-136, 3-SE-(-15)-137C 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 low fire loading and the substantial construction of the heavy concrete walls and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the fire area.

Fire Area 3-SE-8-140 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-SE-8-140B

AREA: 320 sq.ft. **DESCRIPTION:** CHEM. STORAGE RM.

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, (1) in 3-SE-(-15)-136
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	south and east/3hr, north and west/HC
Floor, Ceiling, Roof	2hr
Penetrations	P, C, NP/136
Fixed Openings	OP/140A
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			A
Summary (Hot and Cold)			A

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

FIRE AREA/ZONE 3-SE-8-140B

Location

Safety Equipment Building - El. 8'-0" - Chemical Storage Room -320 square feet - Figures 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 equipment in the zone. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. An ionization smoke detector, located within the zone, provides early warning alarm in the control room.

Construction

The east and south walls are reinforced concrete with a 3 hour rating. The west wall is nonrated reinforced concrete construction with an approximate thickness of 12 inches. The north wall, adjoining the surge tank room (3-SE-8-140A), is 3'-6" high. The ceiling and floor are 2 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 8-32, 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 available portable equipment is adequate to extinguish the fire.

Portable smoke exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between 3-SE-8-140B and 3-SE-(-15)-136 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 low fire loading and the substantial construction of the heavy concrete walls preclude the propagation of the design basis fire beyond the boundaries defining the fire area.

Appendix R compliance for fire area 3-SE-8-140 is discussed in fire zone 3-SE-8-140A.

FPS **FIRE AREA/ZONE:** 3-SE-8-141

AREA: 300 sq.ft. **DESCRIPTION:** SURGE TK. RM.

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, (1) in 3-SE-(-15)-136
Portable Extinguishers	none, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	135A/HC, others 3hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, QP/136, NP/135A
Fixed Openings	none
Doors	W/3-SE-(-15)-136

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	N	A	A,B
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)	N	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,X
Summary			A,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-SE-8-141

Location

Safety Equipment Building - El. 8'-0" - Surge Tank Room - 300 square feet - Figures 8-32

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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

There is no fire fighting equipment in the area. Manual fire fighting equipment is available in adjacent area 3-SE-(-15)-136. No fire detection equipment is provided within the area.

Construction

The walls of the area are reinforced concrete and are 3 hour rated, except for the wall adjoining 3-SE-(-5)-135A which is nonrated reinforced concrete construction with an approximate thickness of 1 foot. The ceiling and floor are 2 hour rated. A nonrated watertight door allows access to the area from the A/C room (3-SE-(-15)-136).

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-32, sheet 3.

Conclusions

Portable exhaust fans may be used to remove smoke generated by the design basis fire.

The fire boundaries between fire area 3-SE-8-141 and 3-SE-(-5)-135A and 3-SE-(-15)-136 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 low fire loading and the substantial construction of the barriers and nonrated door preclude the propagation of the design basis fire beyond the boundaries defining the area.

Fire Area 3-SE-8-141 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-SE-30-142A

AREA: 6634 sq.ft. **DESCRIPTION:** ELECTRICAL TUNNEL

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 3-AC-30-21, (1)in 2-AC-30-22
Portable Extinguishers	yes
Detectors (type)	ionization, heat detectors

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ESSENTIAL ELECTRIC SYSTEMS

	Equipment	MCC and Switchgear	Cable
220 KV (AC)			X
4160 V (AC)			B,A
480 V (AC)			B
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-SE-30-142A

Location

Safety Equipment Building - El. 30'-0" - Electrical Tunnel - 6634 square feet - Figures 8-33, 8-34

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 and oil.

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

Fire Protection Equipment

The zone contains an automatic water spray system with fixed temperature rate of rise heat detectors. Actuation by the heat detectors results in control room annunciation. Manual fire fighting equipment is available within the zone and from the auxiliary control building (3-AC-30-21 and 2-AC-30-22). Ionization smoke detectors, located within the zone, provide early warning alarm in the control room.

Construction

The walls defining the zone are reinforced concrete and are 3 hour rated, except the walls adjoining zone 3-SE-50-146 at the riser which are heavy concrete. The roof and floor are 2 hour rated. A 3 hour rated door communicates with the auxiliary control building (3-AC-70-65). A 3 hour UL equivalent door also communicates with the auxiliary control building (3-AC-30-21). The zone is open to the cable tunnel (3-CT-(-2)-142B). Exhaust louvers penetrate the exterior walls. Interior ventilation duct penetrations 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 revisions of Figures 8-33 and 8-34, sheet 3.

Cable for the following systems is wrapped in fire zone 3-142A:

Component Cooling Water - Train A	Shutdown Cooling - Train A
Auxiliary Feedwater - Train A	HVAC - 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. Portable suppression equipment is available. The water spray system may also be actuated from one of the manual pull stations located throughout the zone. The available portable equipment is adequate to extinguish the fire during its initial stages of growth.

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

Should automatic water spray system fail to actuate, the fire department will be utilized to extinguish the fire.

The normal ventilation system will effectively remove the smoke generated by the design basis fire. Portable smoke exhaust fans may be used if additional smoke removal capability is required.

The fire boundaries between 3-SE-30-142A and 3-SE-50-146 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-CT-(-2)-142 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems as available for a fire in zones 142A and 142B, and Train B systems for a fire in zone 142C. For fires in 142A and 142B, Train A equipment is utilized for shutdown except for localized areas where Train A equipment is not protected. In these localized areas, there is adequate separation between the Train A and Train B equipment and cabling to ensure that the Train B equipment will be available. Train A CCW, HVAC, SDC, and AFW system cables routed in zone 3-142A or 3-142B are wrapped and will remain available.

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 has been accepted from the requirements of Section III.G.2. to the extent it requires the separation of redundant safe shutdown trains by one hour rated barriers. Specifically, this deviation was requested for redundant safe shutdown cables in fire zone 3-SE-30-142A separated by 43 feet with intervening combustibles, and redundant safe shutdown cables in fire zone 3-CT-(-2)-142B separated by 125 feet with intervening combustibles. The redundant cables are not protected by one hour rated barriers. 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-SE-30-145A

AREA: 4576 sq.ft. **DESCRIPTION:** WTR. CTRL. RM./EQUIP. ACC. RM.

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)	ionization (local)

FIRE RESISTANCE RATING

Walls	3hr/142A,2C,3A, 2hr/173, NR/146,145B, HC/others
Floor, Ceiling, Roof	2hr floor, partial roof
Penetrations	P, C
Fixed Openings	CH/138,139, OP/146,MH/tendon acc.gallery
Doors	none

HOT STANDBY SYSTEMS

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

COLD SHUTDOWN SYSTEMS

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

ASSOCIATED CIRCUITS OF CONCERN

H/l Pressure Interface	NO
Spurious Operation	YES

FIRE AREA/ZONE 3-SE-30-145A

Location

Safety Equipment Building - El. 30'-0" - Water Control Room/Equipment Access Room - 4576 square feet - Figures 8-33

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 hydraulic fluid.

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

Fire Protection Equipment

There is no fire fighting equipment located within the zone. Local ionization smoke detectors provide early warning alarm in the control room. Manual suppression capabilities available from hydrants in the yard.

Construction

The zone is comprised of the 30'-0" elevation of the roof of the safety equipment building. The north and west walls, which separate the area from the adjacent electrical tunnel (3-SE-30-142A), are reinforced concrete with a 3 hour rating as is the wall to the Penetration Building. The portion of the south wall adjoining the storage room (3-SE-30-173) is 2 hour rated. The floor is 2 hour rated with removable hatches to the heat exchanger rooms (3-SE-(-15)-138 and 3-SE-(-15)-139) below. A partial heavy concrete roof and heavy concrete missile shields are provided to protect the main steam isolation valves.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-33, sheet 3.

Conclusions

The local ionization detectors 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 equipment is adequate to extinguish the fire.

The fire boundaries between fire area 3-SE-30-145A and 3-SE-(-15)-138 and 3-SE-(-15)-139 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 separating the zone from adjacent areas containing safe shutdown equipment.

Fire Area 3-SE-25-145 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-SE-25-145B

AREA: 343 sq.ft. **DESCRIPTION:** AFW STEAM TRENCH

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	NR/145A, others HC
Floor, Ceiling, Roof	2hr/floor to 142B, 161B, HC/floor grade
Penetrations	NP/161A
Fixed Openings	roof grating
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:** 3-SE-50-146

AREA: 6476 sq.ft. **DESCRIPTION:** ROOF SE BUILDING

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/32,33,3A, HC/142A, NR/others
Floor, Ceiling, Roof	2hr/floor, no roof
Penetrations	none
Fixed Openings	OP/145A
Doors	L/3-PE-45-3A

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:** 3-SE-(-12)-170

AREA: 4834 sq.ft. **DESCRIPTION:** EMERGENCY RECIRC. 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	west 3hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C
Fixed Openings	none
Doors	(3)W/tendon access gallery

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

FIRE AREA/ZONE 3-SE-(-12)-170

Location

Safety Equipment Building - El. (-12'-0") - Emergency Recirc. Tunnel - 4834 square feet - Figures 8-27, 8-31

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 located within the area.

Construction

The west wall of the area is 3 hour rated. The remainder of the area walls are heavy concrete with an approximate thickness of 36 inches. The ceiling is 2 hour rated. The floor to grade is nonrated heavy concrete construction. Redundant safe shutdown system valves, located in the isolation valve rooms, are separated by a full height heavy concrete wall, which runs the entire length of the room east of the tendon access gallery. Each valve room is separated from the tendon access gallery by a nonrated watertight door. A nonrated watertight door also provides access to the emergency recirculation piping tunnel, west of the tendon access gallery.

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revisions of Figures 8-27 and 8-31, sheet 3.

Conclusions

The fire boundaries and associated fire protection features are adequate to prevent the propagation of fire beyond the fire boundaries. The minimal fire loading, the lack of access, and the substantial construction of the heavy concrete walls precludes the possibility of a significant fire.

Fire Area 3-SE-(-12)-170 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-SE-30-173

AREA: 208 sq.ft. **DESCRIPTION:** STORAGE ROOM

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

Walls	south and west/3hr, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	C
Fixed Openings	MH/176
Doors	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)			
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:** 3-SE-(-2)-176

AREA: 660 sq.ft. **DESCRIPTION:** CABLE TUNNEL ACCESS ROOM

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	142B/3hr, others HC
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, NP/161B
Fixed Openings	MH/173
Doors	B/3-CT-(-2)-142B

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

Section 3FH
Tab

UNIT 3 FUEL HANDLING BUILDING

The Unit 3 Fuel Handling Building is a reinforced concrete structure which houses the fuel handling systems and the spent fuel pool. The Fuel Handling Building is divided into thirteen (13) fire areas. The barrier penetration and door fire ratings are noted in the matrices.

The Fuel Handling Building contains part of or all of the following systems, which can be used for, or support, safe shutdown and cooldown:

- Component Cooling Water
- Electrical Panels

The type of fire protection/detection equipment available in or near this building consists of the following:

- Portable extinguishers.
- Manual water spray systems are provided for charcoal filter units. Heat sensors, installed in the filters, alarm on high temperature.
- Smoke and infrared detectors.
- A standpipe system with manual hose stations.

Fire Area/Zone	Contains Safe Shutdown Equipment/Cables	Contains Safety-Related Equipment/Cables	Figure No.
3-FH-17-122	No	Yes	8-35
3-FH-17-123	Yes	Yes	8-35, 8-36
3-FH-15-124	No	No	8-35, 8-36
3-FH-15-125	No	Yes	8-35, 8-36
3-FH-30-126	Yes	Yes	8-35
3-FH-30-127	No	Yes	8-35
3-FH-30-128	No	No	8-35
3-FH-30-129	No	No	8-35, 8-36
3-FH-45-130	Yes	Yes	8-36
3-FH-45-131	No	No	8-36
3-FH-45-132	Yes	Yes	8-36
3-FH-63-134	No	No	8-36
3-FH-30-174	No	No	8-36

FPS **FIRE AREA/ZONE:** 3-FH-17-122

AREA: 671 sq.ft. **DESCRIPTION:** FUEL PUMP RM.

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

Suppression (type)	none
Hose Stations	none
Portable Extinguishers	none, adjacent
Detectors (type)	ionization

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	C, P, D
Fixed Openings	MH/126
Doors	A/3-PE-9-2A

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

Location

Fuel Handling Building - El. 17'-6' - Fuel Pump Room - 671 square feet - Figure 8-35

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 would involve mostly oil.

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 zone 3-PE-9-2A. Ionization smoke detectors, located in the area, provide early warning alarm in the control room.

Construction

The walls defining the area are 3 hour rated. The ceiling is 2 hour rated heavy concrete construction. The floor to grade is nonrated heavy concrete construction. One 3 hour rated door separates the area from the penetration building (3-PE-9-2A). Ventilation duct penetrations are provided with 3 hour rated dampers.

Safe Shutdown Equipment

None

Licensee Controlled Specification Barriers

For definition of the barriers requiring surveillance per LCS 3.7.104, refer to the latest revision of Figure 8-35, sheet 3.

Conclusions

The ionization detection system is expected to detect the products of combustion from the 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 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 design basis fire is insufficient to breach the barriers defining the zone/fire area.

Fire Area 3-FH-17-122 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems. No safe shutdown systems will be disabled 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:** 3-FH-17-123

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

DESIGN BASIS FIRE

Fire Loading Category:	Minimal
Fire Loading - Max Permiss	40,000.0 Btu's/sq.ft.

FIRE PROTECTION (AVAILABLE)

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

FIRE RESISTANCE RATING

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

HOT STANDBY SYSTEMS

	Equipment	Valves	Cable
Reactor Coolant			
Reactor Protection System			
Shutdown Cooling			
Chemical and Volume 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,X
Summary			B,X

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO

Location

Fuel Handling Building - El. 17'-6" - Spent Fuel Pool/Operating Floor - 5717 square feet - Figures 8-35, 8-36

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 40,000 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 Class A combustibles, rubber and cable.

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. Infrared detectors provide early warning alarm in the control room.

Construction

The walls of the area are 3 hour rated. The floor to other fire area/zones and ceiling are 2 hour rated concrete construction. The floor to grade is nonrated heavy concrete construction. A 3 hour rated door separates the area from the penetration building (3-PE-63-3B). Ventilation duct penetrations to adjacent areas 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 revisions of Figures 8-35 and 8-36, sheet 3.

Conclusions

The infrared detection system is expected to detect the fire within the initial stages of growth 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 the smoke generated by the design basis fire. Portable smoke exhaust fans may then be used to vent smoke from the area.

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

Fire Area 3-FH-17-123 Appendix R Compliance

Safe shutdown capability will be provided by 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-FH-15-124

AREA: 197 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
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/north,2A, others 2hr
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	P, C
Fixed Openings	none
Doors	A/3-PE-9-2A, B/3-FH-15-125,B/3-FH-30-128,B/3-FH-45-131, A/3-FH-63-134,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

FPS **FIRE AREA/ZONE:** 3-FH-15-125

AREA: 847 sq.ft. **DESCRIPTION:** STORAGE RM 102 + 103

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	yes
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/123,142C, 2hr/124, HC/exterior
Floor, Ceiling, Roof	2hr/ceiling, HC/floor
Penetrations	D, C
Fixed Openings	none
Doors	B/3-FH-15-124

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 3-FH-15-125

Location

Fuel Handling Building - El. 15'-0" - Storage Rooms 102 and 103 - 847 square feet - Figure 8-35.

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 expected to occur in this area during normal operation. The maximum credible fire is postulated to involve transient combustible materials.

Fire Protection Equipment

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

Construction

The east wall of the area, which separates the area from the cable shaft (3-CT-16-142C), is 3 hour rated. The portions of the area walls adjoining the penetration building and the spent fuel pool (3-FH-17-123) are 3 hour rated. The walls separating the area from the stairwell (3-FH-15-124) are 2 hour rated. Exterior walls are nonrated heavy concrete construction. The ceiling is 2 hour rated concrete construction. The floor to grade is nonrated heavy concrete construction. The area communicates with the stairwell through a 1-1/2 hour rated door. 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 8-35, sheet 3.

Conclusions

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

Fire Area 3-FH-15-125 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems. No safe shutdown systems will be disabled 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:** 3-FH-30-126

AREA: 671 sq.ft. **DESCRIPTION:** HEAT EXCHANGER RM.

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	MH/122
Doors	A/3-PE-30-2C

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		N	
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)		N	

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

Location

Fuel Handling Building - El. 30'-0" - Heat Exchanger Room - 671 square feet - Figure 8-35

Fire Loading

Fire loading category - Minimal
Maximum permissible fire loading - 13,000 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 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 within the area. Manual fire fighting equipment is available in adjacent zone 3-PE-30-2C.

Construction

The walls defining the area are 3 hour rated reinforced concrete construction. The floor and ceiling are 2 hour rated. A 3 hour rated door separates the area from the penetration building (3-PE-30-2C). Ventilation duct penetrations 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 8-35, sheet 3.

Conclusions

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

Fire Area 3-FH-30-126 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems. No safe shutdown systems will be disabled 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:** 3-FH-30-127

AREA: 972 sq.ft. **DESCRIPTION:** TOOL DECON. RM

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	yes
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/123, 2hr/128,124, HC/others
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	none
Doors	A/3-FH-30-128, 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 3-FH-30-127

Location

Fuel Handling Building - El. 30'-0" - Tool Decontamination Room - 972 square feet - Figure 8-35

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, solvents, rubber, and Class A combustibles.

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.

Construction

The north wall separating the area from adjacent area 3-FH-17-123 is 3 hour rated. The remainder of the area's interior walls, as well as the floor and ceiling, are 2 hour rated. Exterior walls are nonrated concrete construction with an approximate thickness of 18 inches. The exterior door is nonrated. The door separating the area from the vestibule (3-FH-30-128) is a 3-hour rated door. Ventilation duct penetrations in the floor and ceiling 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 8-35, sheet 3.

Conclusions

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. Smoke may then be cleared by opening the exterior door, or through the use of portable smoke exhaust fans.

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

Fire Area 3-FH-30-127 Appendix R Compliance

Safe shutdown capability will be provided by utilizing Train A or Train B systems. No safe shutdown systems will be disabled 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:** 3-FH-30-128

AREA: 90 sq.ft. **DESCRIPTION:** VESTIBULE 203

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/2C,142C, 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	P, C
Fixed Openings	MH/129
Doors	B/3-FH-15-124, X/3-PE-30-2C, A/3-FH-30-,127, NR/exterior, B/3-FH-30-129

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:** 3-FH-30-129

AREA: 14 sq.ft. **DESCRIPTION:** DUMBWAITER

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/north,west, others 2hr
Floor, Ceiling, Roof	2hr
Penetrations	none
Fixed Openings	MH/134
Doors	B/3-FH-30-128, B/3-FH-63-134

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:** 3-FH-45-130

AREA: 875 sq.ft. **DESCRIPTION:** A/C RM. NO. 2

DESIGN BASIS FIRE

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

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray for charcoal
Hose Stations	none
Portable Extinguishers	yes, adjacent
Detectors (type)	ionization, temp. detectors for charcoal

FIRE RESISTANCE RATING

Walls	3hr
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D, QP/3A
Fixed Openings	none
Doors	A/3-PE-45-3A

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	NO

Location

Fuel Handling Building - El. 45'-0" - A/C Room No. 2 - 875 square feet - Figure 8-36

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 charcoal 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 manual water spray system is provided for the charcoal filters in the area. A temperature detector is located in the charcoal filter to alarm filter high temperature conditions in the control room. Manual fire fighting equipment is available in the area and in adjacent zone 3-PE-45-3A. One ionization smoke detector provides early warning alarm in the control room.

Construction

The walls defining the area are 3 hour rated reinforced concrete construction. The ceiling and floor are 2 hour rated. One 3 hour rated door separates the area from the penetration building (3-PE-45-3A). Ventilation duct penetrations are provided with 3 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 8-36, sheet 3.

Conclusions

In the event of a charcoal fire, the temperature detector installed in the filters is expected to provide control room alarm on high temperature. The operator will then send personnel into the area to manually operate the charcoal filter water spray system to control and extinguish the fire.

In the event of a transient fire in the area, the ionization detector is expected to detect the fire and alert the control room.

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

The fire boundary between 3-FH-45-130 and 3-PE-45-3A was evaluated. The fire boundary and associated fire protection features were found to be adequate to prevent fire propagation between the fire areas.

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

Fire Area 3-FH-45-130 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-FH-45-131

AREA: 34 sq.ft. **DESCRIPTION:** VESTIBULE 303

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/3A, 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	C
Fixed Openings	none
Doors	B/3-FH-15-124, B/3-FH-45-132,,A/3-PE-45-3A

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:** 3-FH-45-132

AREA: 743 sq.ft. **DESCRIPTION:** A/C RM. NO. 1

DESIGN BASIS FIRE

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

FIRE PROTECTION (AVAILABLE)

Suppression (type)	manual water spray for charcoal
Hose Stations	none
Portable Extinguishers	yes
Detectors (type)	ionization, temp. detect. for char. filter

FIRE RESISTANCE RATING

Walls	3hr/3A,123,142C 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	P, C, D
Fixed Openings	none
Doors	B/3-FH-45-131

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

Location

Fuel Handling Building - El. 45'-0" - A/C Room No. 1 - 743 square feet - Figure 8-36

Fire Loading

Fire loading category - High
Maximum permissible fire loading - 160,000 Btu/sq. ft. (Notes 1 and 2)

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

Note 2: 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 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 in the area. A temperature detector is located in the charcoal filter to alarm filter high temperature conditions in the control room. Manual fire fighting equipment is available within the area. One ionization smoke detector provides early warning alarm in the control room.

Construction

The walls to 3-FH-17-123, 3-CT-16-142C and 3-PE-45-3A are 3 hour rated. The remaining walls are 2 hour rated. The ceiling and floor are 2 hour rated. A 1-1/2 hour rated door allows access to the area from the vestibule (3-FH-45-131). Ventilation duct penetrations in 3 hour rated walls are provided with 3 hour rated fire dampers. Ventilation penetrations in 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 8-36, sheet 3.

Conclusions

In the event of a charcoal fire, the temperature detector installed in the filters is expected to provide control room alarm on high temperature. The operator will then send personnel into the area to manually operate the charcoal filter water spray system to control and extinguish the fire.

In the event of a transient fire in the area, the ionization detector is expected to detect the fire and alert the control room.

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

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

Fire Area 3-FH-45-132 Appendix R Compliance

Safe shutdown capability will be provided by 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-FH-63-134

AREA: 34 sq.ft. **DESCRIPTION:** VESTIBULE 403

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, adjacent
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	3hr/3B, 2hr/others
Floor, Ceiling, Roof	2hr
Penetrations	C
Fixed Openings	MH/129
Doors	B/3-FH-15-124, NR/roof, A/3-PE-63-3B,,B/3-FH-30-129

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:** 3-FH-30-174

AREA: 3165 sq.ft. **DESCRIPTION:** RAILROAD BAY

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	none
Portable Extinguishers	none
Detectors (type)	none

FIRE RESISTANCE RATING

Walls	west 3hr, east HC, north and south NR
Floor, Ceiling, Roof	2hr
Penetrations	C
Fixed Openings	MH/123, CH/123
Doors	none

HOT STANDBY SYSTEMS

- 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

Equipment	Valves	Cable

COLD SHUTDOWN SYSTEMS

- Shutdown Cooling
- CCW (To SDC)
- HVAC
- Summary (Hot and Cold)

Equipment	Valves	Cable

ESSENTIAL ELECTRIC SYSTEMS

- 220 KV (AC)
- 4160 V (AC)
- 480 V (AC)
- 120 V (AC)
- 125 V (DC)
- Electric Panels
- Summary

Equipment	MCC and Switchgear	Cable

ASSOCIATED CIRCUITS OF CONCERN

H/I Pressure Interface	NO
Spurious Operation	NO