

3.14.C Fire Detection

1. The fire detection instrumentation for each plant listed in Table 3.14.C.1 shall be operable when the equipment in that area is required to be operable.
2. If the number of operable fire detection instruments is less than the minimum instrument operability requirement of Table 3.14.C.1:
 - a. establish a fire watch patrol to inspect each accessible area at intervals of at least:
 - 1) Once per shift for areas with less than the minimum number of operable instruments required by Table 3.14.C.1 but with at least one instrument operable.
 - 2) Once every hour for areas without an operable instrument.
 - b. restore accessible system components to an operable status within 14 days, submit a Special Report to the Commission within 31 days outlining the cause of the malfunction and the plans for restoring the instruments to an operable status. Reactor startup and/or continued reactor operation is permissible.

4.14.C Fire Detection

- 1.a. The smoke detectors listed in Table 3.14.C.1 shall be functionally tested semi-annually in accordance with the manufacturer's instructions.
 - b. The heat detectors listed in Table 3.14.C.1 shall be functionally tested semi-annually with a heat source.
 - c. The NFPA Code 72D Class A supervised circuits between the local panel and control room of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.
 - d. Thermal heat detection cable shall be tested for alarm functions (continuity and trouble alarms) at least once per six months. Loop resistance shall be measured, recorded, and compared to that previously recorded.
2. The testing interval for smoke and heat detectors which are inaccessible due to high radiation or inerting may be extended until such time as the detectors become accessible for a minimum of 36 hours. Such detectors shall be functionally tested at a maximum interval of once per refueling cycle.

LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS3.14.D Fire Barriers

1. Fire barriers (including walls, floor, ceilings, electrical cable enclosures, cable, piping and ventilation duct penetration seals, fire doors, and fire dampers) which protect safety related systems required to ensure safe shutdown capability in the event of a fire, shall be functional.

2. If the requirements of 3.14.D.1 cannot be met, within one hour establish a continuous fire watch on at least one side of the affected fire barrier, or verify the operability of fire detectors on at least one side of the inoperable fire barrier and establish an hourly fire watch patrol. Reactor startup and continued reactor operation is permissible.

4.14.D Fire Barriers

1. Fire barriers required to meet the provisions of 3.14.D.1 (fire doors excluded - see specification 4.14.D.2) shall be verified operable following maintenance or modifications, and by performing the following visual inspection at least once per 18 months:*
 - a. The exposed surface of each fire barrier wall, floor, ceiling, and electrical cable enclosure. Exposed surfaces are those surfaces that can be viewed by the inspector from the floor.
 - b. Approximately 10 percent of the fire dampers such that each damper is inspected once per 15 years.
 - c. Approximately 10 percent of the fire barrier penetration seals (including electrical cable, piping, ventilation duct penetration seals, and excluding internal conduit seals) such that each penetration seal will be inspected at least once per 15 years. (The penetration seals in the fire barriers which are inspected during each surveillance shall depict a representative sample of the different types of seals.) Difficult-to-view fire barrier (unexposed) walls, ceilings, and electrical cable enclosures that are rendered accessible by the penetration seal inspection program shall also be inspected during each 10 percent inspection.

*Fire barrier inspections requiring access to radiation areas may be deferred until the next refueling outage or shutdown initially expected to be of at least 30-day duration.

4.14.D Fire Barriers (Cont'd)

1. (Continued)

If any penetration seal or fire damper selected for inspection is found by surveillance requirements 4.14.D.1(b) and (c) in a condition which may compromise the operability of the penetration seal or fire damper, the cause shall be evaluated. If the cause is a failure to adhere to penetration seal or fire damper procedures, or an identified phenomenon (e.g., physical interference), the cause shall be corrected and potentially affected seals inspected. Otherwise, a visual inspection of an additional 10 percent, selection based on the nature of the degradation, shall be made. This inspection process shall continue until a 10 percent sample with no degradation is found.

2. Fire doors required to meet the provisions of 3.14.D.1 shall be verified operable by inspecting the closing mechanism and latches at least once per 6 months*, and by verifying:
 - a. The operability of the fire door supervision system for each electrically supervised fire door by performing a functional test at least once per quarter.
 - b. That each locked-closed fire door is in the closed position at least once per week.
 - c. That each unlocked fire door without electrical supervision is in the closed position at least once per 24 hours.

*Fire door inspections requiring access to radiation areas may be deferred until the next refueling outage or shutdown initially expected to be of at least a 7-day duration.

TABLE 3.14.C.1

FIRE DETECTORS

<u>Location</u>	<u>Detector Type/ Designation(1)</u>	<u>Minimum Detectors Operable</u>
HPSW Pump Room	S391	1
Condensate Demin. Piping Tunnel (91'6") Rms. 17, 50, 53	S111A,S112A,S113A,S114A S115A,S116A,S117A,S118A S119A,S120A,S121A,S122A,	11
Turbine Bldg.-General Area Corridor (116') Room 170	S123A,S124A,S125A,S126A S127A,S128A,S129A,S130A S131A,S132A,S133A,S134A	11
Turbine Bldg.-General Area Corridor (135') Room 264	S135A,S136A,S137A,S138A S139A,S140A,S141A,S145A	7
<u>COMMON</u>		
Control Room	S21, S22, S23, S24	4
Control Room Offices	S137, S138, S139 S140, S141, S142	6
Cable Spreading Room	S4, S7, S9, S10 S47 through S67 (total: 25)	23
Computer Room	S5, S6	2
Diesel Generator Room	H550A,B thru H557A,B (4 in each room)	See (3.14.B.3.c)
D-G Bldg.-Cardox Room	S540, S541, S542	3
HP Utility Room (116') Room 129	S90A	1
Radwaste Bldg. (91'6") Room 33	S73A, S74A, S75A S76A	4
Radwaste Bldg. (116') Room 144, 146	S91A, S92A, S93A	3
Room 141	S94A, S95A, S96A	3
Standby Gas Treatment System	6 per filter train	5
Radwaste Bldgs. Rooms 24, 31 (91'-6")	S8B, S80, S81, S82	4
Rooms 142, 143, 145	S99, S1A, S2A	7
147, 154 (116')	S3A, S4A, S5A S6A	

TABLE 3.14.C.1

FIRE DETECTORS

Location	Detector Type/ Designation (1)	Minimum Detectors Operable
Rooms 236, 237, 238 239, 242 (135')	S23A, S24A, S25A S26A, S27A, S28A S29A, S30A	8
Fan Room (Rm 381)	S3, S44A S105, S195	4
Emergency Cooling Tower Switchgear Rooms	H562, H563, H564 H565	4
Laboratory Area	H1, H2, H3, H4	4
Recombiner Building	H566, H567, H568	3
Startup Switchgear Building	H558, H559 H560, H561	2

(1) S = Smoke Detector H = Heat Detector

(2) Detector(s) inaccessible during normal operation due to inerting.

(3) May be disabled during ILRT.

TABLE 3.14.C.1

FIRE DETECTORS

<u>Location</u>	<u>Detector Type/ Designation (1)</u>	<u>Minimum Detectors Operable</u>
<u>UNIT 2</u>		
Primary Containment (2) (3)	S1, S2, S8	3
CRD Area (135') Rms. 207, 208, 209, 212	S7A, S7B, S8A, S9A, S10A S11A, S12A, S543, S13A, S14A S15A, S16A, S17A, S18A S19A, S20A	14
Isol. Valve Compt. (135') Rm. 204	S21A	1
Operating Area (165') Rm. 402, 403	S31A, S32A, S33A, S34A S35A, S36A, S37A, S38A S39A, S40A, S41A, S42A S43A	12
Laydown Area (195') Rm. 501, 502 508	S45A, S46A, S47A, S48A S49A, S50A, S51A, S52A	7
Vent. Equip. Area (195') Rm. 506	S53A, S54A	2
Vent Stack Rad. Mon.-Refuel floor (234')	S58A, S59A	2
HPCI Room	S78 H5, H6, H7	1 (See 3.14.B.1.c)
RCIC Room	S45, S46	2
Reactor Bldg. Sump Area	S79	1
Core Spray Pump Rooms	S41, S42, S43, S44	4
Vac. Breaker Area-Rm. 107, 108	S91, S92, S93	3
RHR Rooms		
Room 101	S30, S31, S32	3
Room 102	S33, S34, S35	3
Room 103	S36, S37, S38	3
Room 104	S39, S40	2
Torus Area	S83, S84, S85, S86 S87, S88, S89, S90	7

TABLE 3.14.C.1

FIRE DETECTORS

<u>Location</u>	<u>Detector Type/ Designation(1)</u>	<u>Minimum Detectors Operable</u>
Turbine Building-General Area Corridor (116') Room 124	S77A,S78A,S79A,S80A S81A,S82A,S83A,S84A S85A,S86A,S87A,S88A,S89A	12
Turbine Building-General Area Corridor (135') Room 219	S97A,S98A,S99A S1B,S2B,S3B,S4B,S9E	7
Condensate Demin Piping Tunnel (91'6") Rms., 15, 16, 17	S60A,S61A,S62A,S63A S64A,S65A,S66A,S67A S68A,S69A,S70A,S71A	11
M-G Set Lube Oil Rm (Rm 105)	S94,S95,S96,S97,S98	4
Recirc. Pump MG Set Room	S15, S16, S17 S18, S19, S20	5
M-G Set Ventilation Room (165) Room 375	S5B, S6B	2
Emerg. Switchgear Rooms	S11, S12, S13, S14	4
Battery Rooms Room 218	S70, S71	2
Room 225	S68, S69	2
13KV Switchgear Area (116')	S72, S73, S74	3
HPSW Pump Room	S390	1
<u>UNIT 3</u>		
Primary Containment (2) (3)	S103, S104, S106	3
CRD Area (135') Rms. 250 252, 253, 257	S144A,S166,S167,S168,S169 S170,S171,S544,S172,S173 S174,S175,S176,S177 S178,S179	14
Isol. Valve Compt. (135') Rm 249	S181	1
Operating Area (165') Rm. 443, 444	S182,S183,S184,S185 S186,S187,S188,S189 S190,S191,S192,S193 S194	12

TABLE 3.14.C.1

FIRE DETECTORS

<u>Location</u>	<u>Detector Type/ Designation (1)</u>	<u>Minimum Detectors Operable</u>
Laydown Area (195') Rm. 517, 518, 523	S196,S197,S198,S199 S103A,S104A,S105A,S106A	7
Vent. Equip Area (195') Rm. 520	S107A, S108A	2
Vent Stack Rad. Mon.-Refuel floor (234')	S109A, S110A	2
HPCI Room	S148 H115, H116, H117	1 (See 3.14.B.1.c)
RCIC Room	S131, S132	2
Reactor Bldg. Sump Area	S149	1
Core Spray Pump Rooms	S133,S134,S135,S136	4
Vac. Breaker Area- Rm. 160, 161	S158, S159, S160	3
RHR Rooms		
Room 156	S120, S121	2
Room 157	S122, S123, S124	3
Room 158	S125, S126, S127	3
Room 159	S128, S129, S130	3
Torus Area	S150,S151,S152,S153 S154,S155,S156,S157	7
M-G Set Lube Oil Room (Room 162)	S161, S162, S163 S164,S165	4
Recirc. Pump MG Set Room	S111, S112, S113 S114, S116, S117	5
M-G Set Ventilation Room (165') Room 382	S142A, S143A	2
Emerg. Switchgear Rooms	S107, S108, S109 S110	4
Battery Rooms		
Room 266	S147, S148	2
Room 268	S145, S146	2
13KV Switchgear Area (116')	S75, S76, S77	3

PBAPS

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of fire patrols in the accessible affected areas is required to provide detection capability until the inoperable instrumentation is returned to service.

D. Fire Barriers

The functional integrity of the fire barriers ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire barriers are a passive element in the facility fire protection program and are subject to periodic inspections. During periods of time when the barriers are not functional, a continuous fire watch, or an hourly fire watch patrol in areas protected by fire detectors, is required to be maintained in the vicinity of the affected seal until the seal is restored to functional status.

The fire barriers subject to these specifications are those barriers separating portions of safety-related systems required to meet the safe shutdown criteria of 10 CFR 50, Appendix R, Section III.G. This section of the Commission's regulations require a fire barrier between the redundant methods selected by the Safe Shutdown Analysis (Appendix R, Section II.B) as essential to achieving and maintaining shutdown conditions. The barriers will ensure that redundant methods are not jeopardized by a single fire. The cable tray and conduit encapsulation provides a 3-hour fire barrier between equipment associated with redundant safe shutdown methods located in the same fire area.

E. Water Suppression System

Water suppression systems for the oil systems located within the M-G set room and M-G set lube oil room are provided to contain a possible oil fire to the respective fire area. The suppression system is a pre-action type using smoke detectors to charge the sprinkler headers with fire water and spray nozzle actuation on high temperature. Both fire water flow (low pipe pressure switch) and smoke detector actuation annunciates in the control room. The sprinkler header is normally pressurized with air, with a low pressure annunciator to monitor header and nozzle integrity.

F. Battery Room Ventilation Flow Detector

Loss of the battery room exhaust ventilation flow will result in a buildup of combustible gases and a potential fire hazard to safety-related cables. A flow detector will annunciate an alarm in the control room upon poor ventilation conditions.