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3.13 Limiting Conditions for Operation

C. Fire Hose Stations

1. Except as specified in 3.12.C.2 below, all hose stations inside the Reactor Building, Turbine Building, and those inside the Administration Building which provided coverage of the Control Room Building shall be operable whenever equipment in the areas protected by the fire hose stations is required to be operable.

2. With one or more of the fire hose stations specified in 3.13.C.1 above inoperable, route an additional equivalent capacity fire hose to the unprotected area(s) from an operable hose station within one hour.

D. High Pressure CO_2 System

1. Except as specified in Specification 3.13.D.2, the CO_2 systems located in the cable vault, switchgear room, and diesel fire pump day tank room shall be operable, whenever equipment in the area protected by the system is required to be operable.

4.13 Surveillance Requirements

C. Fire Hose Stations

1. Each fire hose station shall be verified to be operable:

   a. At least monthly by visual inspection of the station to assure all equipment is available.

   b. At least once each 18 months by removing the hose for inspection and replacing degraded coupling gaskets and reracking.

   c. At least once each year by hydro-statically testing each outside hose at 250 lbs.

   d. At least once per 3 years by hydro-statically testing inside hose at 150 lbs.

   e At least once per 3 years, partially open hose station valves to verify valve operability and no blockage.

D. High Pressure CO_2 System

1. The CO_2 system located in the cable vault, switchgear room, and diesel fire pump day tank room shall be demonstrated operable:

   a. At least once per six months by verifying each CO_2 cylinder does not contain less than 90% of its initial charge.

3.13 Limiting Conditions for Operation

2. From and after the date that the CO_2 system in the cable vault or the switchgear room is inoperable, establish a continuous fire watch within one hour with backup fire suppression equipment. Restore the system to operable status within 14 days or submit a report within the next 30 days to the Commission as specified in 6.7.C.2 outlining the cause of inoperability and the plans for restoring the system to operable status.

3. From and after the date that the CO_2 system in the diesel fire pump day tank room is inoperable, within one hour a fire watch shall be established to inspect the location at least once every hour. Restore the system to operable status within 14 days or submit a report within the next 30 days to the Commission as specified in 6.7.C.2 outlining the cause of inoperability and the plans for restoring the system to operable status.

E. Vital Fire Barrier Penetration Fire Seals

1. Except as specified in Specification 3.13.E.2 below, vital fire barrier penetration seals protecting the Reactor Building, Control Room Building and Diesel Generator Rooms shall be intact.

2. From and after the date a vital fire barrier penetration fire seal is not intact, a continuous fire watch shall be established on at least one side of the affected penetration within 1 hour.

3.13.F Sprinkler Systems

1. Except as specified in Specification 3.13.F.2 below, those sprinkler systems listed in Table 3.13.F.1 shall be operable whenever equipment in the area protected by those sprinklers is required to be operable.

4.13 Surveillance Requirements

b. At least once per 18 months by verifying that the system, including associated ventilation dampers, will actuate automatically to a simulated actuation signal.

c. At least once per operating cycle a flow path test shall be performed to verify flow through each nozzle.

E. Vital Fire Barrier Penetration Fire Seals

1. Vital fire barrier penetration fire seals shall be verified to be functional by visual inspection at least once per operating cycle and following any repair.

4.13.F Sprinkler Systems

1. Each of the sprinkler systems specified in Table 3.13.F.1 shall be demonstrated operable:

a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

b. At least once each month by verifying each valve in the flow path is in its correct position. (For electrically supervised valves, adequate verification is a visual check of electrical indication.)

3.13 Limiting Conditions for Operation

2. From and after the date that one of the sprinkler systems specified in Table 3.13.F.1 is inoperable, a fire watch shall be established within one hour to inspect the location with the inoperable sprinkler system at least once every hour. Restore the sprinkler system to operable status within 14 days or submit a report within the next 30 days to the Commission as specified in 6.7.C.2 outlining the cause of the malfunction and the plans for restoring the system to operable status.

4.13 Surveillance Requirements

c. At least once per 18 months by;

1. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.

. A visual inspection of the sprinkler headers to verify their intergrity, and

3. A visual inspection of each nozzle's spray area to verify that the spray pattern is not obstructed.

4. Verifying that automatic valves actuate to their correct position from a test signal.

d. At least once per 3 years by performing a flow test through each open head sprinkler header and verifying each open head sprinkler nozzle is unobstructed.

3.13.G Foam Systems

1. Except as specified in Specification 3.13.G.2 below, the Recirculation M.G. Set Foam System shall be operable with its foam concentrate tank full (100 gallons) whenever the Recirculation M.G. Sets are operating.

2. From and after the date that the Recirculation M.G. Set Foam System is inoperable, a fire watch shall be established to inspect the location at least once every hour; and a foam nozzle shall be brought to the Reactor Building elevation containing the Recirculation M.G. Sets. A 100 gallon foam concentrate supply shall be available on site.

4.13.G Foam Systems

1. The foam system specified in 3.13.G shall be demonstrated operable.

a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

b. At least once per 18 months by:

3.13 Limiting Conditions for Operation

3. Except as specified in Specification 3.13.G.4 below, the Turbine Building Foam System shall be operable with its foam concentrate tank full (150 gallons).

4. From and after the date that the Turbine Building Foam System is operable a portable foam nozzle shall be brought to the Turbine Building Foam System location. A 150 gallon foam concentrate supply shall be available on site.

4.13 Surveillance Requirements

1. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.

2. A visual inspection of the foam system and equipment to verify intergrity, and

3. A visual inspection of the Recirculation MG Set Foam System foam nozzle area to verify that the spray pattern is not obstructed.

4. Foam concentrate samples shall be taken and analyzed for acceptability.

d. At least once per 3 years by performing an air flow test through the Recirculation MG Set foam header and verifying each foam nozzle is unobstructed.

Table 3.13.A.1

Fire Detection Sensors

	Sensor Location	Minimum No. Sensors Required to be Operable		
		Heat	Flame	Smoke
1.	Cable Spreading Room & Station Battery Room	-	-	23
2.	Switchgear Room	-	-	20
3.	Diesel Generator Room (A)	-	-	2
4.	Diesel Generator Room (B)	-	-	2
5.	Intake Structure (Service Water)	1	1	1
6.	Recirc Motor Generator Set Area	3	-	8
7.a	Control Room Zone 1 (Control Room Ceiling)	-	-	14
7.b	Control Room Zone 2 (Control Room Panels)	-	-	18
7.c	Control Room Zone 3 (Control Room Panels)	-	-	25
7.d	Control Room Zone 4 (Control Room Panels)	-	-	10
7.e	Control Room zone 5 (Exhaust & Supply Ducts)	-	-	2
8.a	Rx Bldg. Corner Rm NW 232	-	-	1
8.b	Rx Bldg. Corner Rm NW 213 (RCIC)	-	-	1
8.c	Rx Bldg. Corner Rm NE 232	-	-	1
8.d	Rx Bldg. Corner Rm NE 213	-	-	1
8.e	Rx Bldg. Corner Rm SE 232	-	-	1
8.f	Rx Bldg. Corner Rm SE 213	-	-	1
8.g	Rx Bldg. Corner Rm SW 232	-	-	1
9.	HPCI Room	-	-	8

Table 3.13.A.1, cont.

Sensor Location	Minimum No. Sensors Required to be Operable		
	Heat	Flame	Smoke
10. Torus area	12	-	16
11. Rx Bldg. Cable Penetration Area	-	-	7
12. Refuel Floor	-	-	13
13. Diesel Oil Day Tank Room (A)	-	1*	1*
14. Diesel Oil Day Tank Room (B)	-	1*	1*
15. Turbine Loading Bay (vehicles)	-	3	-

*NOTE: The Diesel Day Tank Rooms require only one detector operable (1 flame or 1 smoke).

Table 3.13.F.1
Sprinkler Systems

1. Reactor Building Penetration Area Preaction System
2. Diesel Generator Room A System
3. Diesel Generator Room B System
4. Turbine Loading Bay System
5. Diesel-driven Fire Pump System

Bases:

3.13/4.13 Fire Protection Systems

On May 11, 1976, Vermont Yankee received a letter from the NRC requesting that an in-depth evaluation of the existing fire protection systems be performed using Branch Technical Position (BTP) APCSB 9.5-1 as a guide. Concurren with this evaluation a fire hazards analysis of the entire plant complex was required. In an effort to clarify the BTP an Appendix A was subsequently issued to specifically address operating plants. Enclosed with this Appendix the NRC requested that proposed Technical Specifications on fire protection also be submitted. The subject section 3.13/4.13 and the following specific bases are those spcifications evolving from these efforts.

A. The smoke, heat and flame detectors provide the early warning fire detection capability necessary to detect problems in vital areas of the plant. Surveillance requirements assure these sensors and their associated instruments to be operable. When the equipment protected by the detectors is not required to be operable, specifications covering the sensors and instruments do not apply.

B,C,D, F and G. The Vital Fire Suppression Water System, CO_2 systems, sprinkler systems and foam systems specifications are provided to meet pre-established levels of system operability in the event of a fire. These systems provide the necessary protection to assure safe reactor shutdown. Periodic surveillance testing provides assurance that vital fire suppression systems are operable.

E. Vital fire barrier penetration fire seals are provided to assure that the fire resistance rating of barriers is not reduced by a penetration. Surveillance inspections shall be performed to insure that the integrity of these seals is maintained.

The diesel fire pump has a design consumption rate of 18 gallons of fuel per hour; therefore, 150 gallons provides for greater than 8 hours of operation. Additional fuel can be delivered in about one hour and additional fuel is on site. When the equipment protected by the fire protection systems is not required to be operable, the specifications governing the fire protection system do not apply.