

ATTACHMENT I

POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT 3 NUCLEAR POWER PLANT
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3.14 FIRE PROTECTION AND DETECTION SYSTEMS

Applicability

This specification applies to the operability of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To assure the operability of fire protection and detection systems.

Specification

A. High Pressure Water Fire Protection System

1. The high pressure water fire protection system shall have:
 - a. Two (2) main fire pumps operable and properly aligned to the high pressure fire header.
 - b. Automatic initiation circuitry for each of the main fire pumps in 3.14.A.1.a are operable.
 - c. All piping and valves necessary for proper functioning of any portion of the system required for protection of safe shutdown systems operable.
 - d. A minimum available water volume of 300,000 gallons contained in each of the two (2) Fire Water Tanks for fire protection purposes.
2. With less than the equipment required by 3.14.A.1 operable, the inoperable equipment shall be restored to operable status within 7 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.f within the next 30 days outlining the plans and procedures to be used for restoring the inoperable equipment to operable status.
3. With no main fire pumps operable:
 - a. An alternate fire protection system shall be established within 24 hours.
 - b. The Region I Office of Inspection and Enforcement shall be notified within 24 hours of identification by telephone and confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event.
 - c. A Special Report shall be submitted in accordance with specification 6.9.2.f within 14 days of following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

- d. If the requirement of 3.14.A.3.a cannot be satisfied within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirement of 3.14.A.3.a cannot be satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures.

B. Fire Protection Spray and/or Sprinkler Systems

1. The following spray and/or sprinkler systems shall be operable whenever equipment in the area is required to be operable in accordance with Section 3 of the Technical Specifications:
 - a. Electrical Tunnel Fire Protection Water Sprinkler System (El-34' and El-43').
 - b. Diesel Generator Building Water Sprinkler System (El-15' in D.G. Building).
 - c. Containment Fan Cooler Charcoal Filter Dousing System (El-68' in Containment).
2. If the requirements of 3.14.B.1 cannot be satisfied and the equipment in the area is required to be operable:
 - a. A continuous fire watch with backup fire suppression equipment shall be established for the accessible unprotected area(s) within 1 hour.
 - b. The inoperable spray and/or sprinkler system(s) shall be restored to operable status within 14 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.f within the next 30 days outlining the cause of inoperability and the plans for restoring the system(s) to operable status.

C. Penetration Fire Barriers

1. The following penetration fire barriers shall be functional at all times when the equipment in these areas are required to be operable in accordance with Section 3 of the Technical Specifications:
 - a. Penetration fire barriers between the central control room floor and the cable spreading room.
 - b. Penetration fire barriers between the 480 V switchgear room and the cable spreading room.
 - c. Penetration fire barriers separating the diesel generator compartments from each other and from the Control Building.
 - d. Penetration fire barriers separating the Control Building from the Turbine Building.
 - e. Penetration fire barriers separating the Cable Spreading Room from the Electrical Tunnels.

2. If the requirements of 3.14.C.1 are not met and the equipment in these areas are required to be operable:

- a) within one (1) hour, either
 - i) Verify the operability of fire detectors on at least one side of the non-functional fire barrier and establish an hourly fire watch patrol, or
 - ii) establish a continuous fire watch on at least one side of the affected fire barrier penetration
- b) Restore the non-functional fire barrier penetration(s) to functional status within 7 days or submit a report to the Commission pursuant to specification 6.9.2.f within the next 30 days outlining the action taken, the cause of the non-functional penetration and plans for restoring the fire barrier penetration(s) to functional status.

D. Fire Detection Systems

1. As a minimum, the fire detection instrumentation for each location shown in Table 3.14-1 shall be operable whenever equipment in that location is required to be operable in accordance with Section 3 of the Technical Specifications:
2. With the number of operable fire detection instruments less than the minimum required by Table 3.14-1 and the equipment in that location is required to be operable:
 - a. A fire watch patrol shall be established within 1 hour where accessibility permits to inspect the location(s) with less than the minimum operable instrumentation at a frequency of at least once per hour.
 - b. The minimum operable instrumentation required in Table 3.14-1 shall be restored within 14 days or a Special Report shall be prepared and submitted to the Commission pursuant to specification 6.9.2.f within the next 30 days outlining the cause of the malfunction and the plans for restoring the instrumentation to operable status.

E. Fire Hose Stations

1. The fire hose stations shown in Table 3.14-2 shall be operable whenever equipment in the area is required to be operable in accordance with Section 3 of the Technical Specifications:
2. If the requirements of 3.14.E.1 cannot be satisfied and the equipment in that area is required to be operable, an additional equivalent capacity hose shall be routed to the affected area from an operable station within one hour or suitable portable fire fighting equipment made available at the location.

F. Yard Fire Hydrants and Hydrant Hose Houses

1. The yard fire hydrants and associated hydrant hose houses shown in Table 3.14-3 shall be operable while the unit is above cold shutdown.
2. With one or more of the yard fire hydrants or associated hydrant hose houses shown in Table 3.14-3 inoperable, within 1 hr. have sufficient additional lengths of 2½ inch diameter hose located in an adjacent operable hydrant hose house to provide service to the unprotected area(s).

G. CO₂ Fire Protection System

1. As a minimum, one CO₂ Storage Tank shall be available with a minimum level of 60% and a minimum pressure of 275 psi to supply safety-related areas whenever equipment in these areas are required to be operable in accordance with Section 3 of the Technical Specifications:
2. CO₂ System Fire Protection shall be available to the following safety related areas whenever equipment in those areas are required to be operable in accordance with Section 3 of the Technical Specifications:
 - a. Control Building (EL-33') - Cable Spreading Room
 - b. Control Building (EL-15') - Switchgear Room
 - c. Diesel Generator Building (EL-15')
3. If the requirements of 3.14.G.1 and 3.14.G.2 cannot be satisfied and the equipment in the area is required to be operable:
 - a. The hose stations located in the east stairwell of the Control Building (El. 15', 33') shall be operable as a backup system for the appropriate elevation.
 - b. If requirement of 3.14.G.3.a are not satisfied, a continuous fire watch with backup fire suppression equipment shall be established for the accessible unprotected area(s) within 2 hours.
 - c. If the requirement of 3.14.G.1 and 3.14.G.2 are not satisfied within 14 days, a special report shall be prepared and submitted to the commission pursuant to specification 6.9.2.F within the next 30 days outlining the cause of inoperability and the plans for restoring the CO₂ system to operable status.

Basis

These specifications are established to assure the operability of fire protection and detection systems provided to protect equipment utilized for safe shutdown of the unit. The fire protection and detection systems installed at IP-3, conform to Appendix A of Branch Technical Position (BTP) APCS 9.5-1 "Fire Protection for Nuclear Power Plants", as approved by the NRC Regulatory Staff on March 6, 1979 as Amendment No. 24 to facility operating license No. DPR-64, and supplements thereto.

Fire Detection Instruments

<u>Instrument Location</u>	<u>Minimum Instruments Operable</u>		
	<u>Heat</u>	<u>Smoke</u> (ionization detectors)	<u>Flame</u> (Ultra violet)
1. Cable Spreading Room (Control Building: El-33')		7	
2. Switchgear Room Control Building: El-15')		7	
3. Electrical Tunnels:			
Upper (El-43')	69*	4	
Lower (El-34')	66*	4	
4. Electrical Penetration Areas:			
Upper (Fan House: El-46')	33*	3	
Lower (Fan House: El-34')	17*	4	
5. Diesel Generator Building (El-15')	4 per D.G.		
6. Containment Fan Cooler Units (Containment: El-68')	4 per FC Unit		
7. Primary Auxiliary Building			
a. Corridor: El 55'		7	
b. MCC Nos. 37,38,39 El 55' (Underfloor Area)		5	
c. CS Pump Area El 41'		2	
d. Component Cooling Pump Area		4	
e. RHR Pumps El 15'		1 per RHR Pump cubicle	
f. Charging Pump Rooms		2	
8. Aux. Feed Pump Building		1	
9. Battery Room No. 31			1
" " 32			1
Battery Area 33			1
10. Fan House: El 41' and 51' (Pipe Penetration Area)		5	
11. Control Room			
Supervisory Panel		2	
Flight Panel		1	
Ceiling Area		8	
Ductwork		3	
12. Containment Building		4	

*Temperature Detector/Trip Devices

Table 3.14-2

Fire Hose Stations

<u>Building</u>	<u>Location</u>	<u>Elevation</u>
Turbine Building	Control Bldg. Entrance	15'
Turbine Building	Control Bldg. Entrance	33'
Turbine Building	Control Bldg. Entrance	53'
Aux. Feed Pump Bldg.	Outside Stairwell	18'-6"
Primary Aux. Bldg.	West Stairwell	55'
Primary Aux. Bldg.	West Stairwell	34'
Primary Aux. Bldg.	West Stairwell	15'
Primary Aux. Bldg.	East Stairwell	73'
Primary Aux. Bldg.	East Stairwell	55'
Primary Aux. Bldg.	East Stairwell	41'
Primary Aux. Bldg.	West Side of Bldg.	73'

Table 3.14-3

Yard Fire Hydrant and Associated Hydrant Hose Houses

<u>Location</u>	<u>Hydrant No.</u>
1. Screenwell Area	#31 or #32
2. Aux. Feed Pump Bldg.	#35
3. Primary Aux. Bldg.	#36, 38, 39
4. Diesel Gen Bldg.	#310

Applicability

This specification applies to the surveillance requirements of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To verify the operability of fire protection and detection systems.

Specification

A. High Pressure Water Fire Protection System Testing:

1. Testing Requirements:

<u>Item</u>	<u>Frequency</u>
a. <u>Fire Water Storage Tanks Minimum Water Volume.</u>	once/week
b. <u>Main Fire Pump Operability-</u> Each pump operating for at least 15 minutes.	once/month
c. <u>Valve Position Check-</u> Verification that each valve (manual, power operated or automatic) in the flow path necessary for proper functioning of any portion of this system required for protection of safe shutdown systems is in its correct position. If the valve has an installed monitoring system, the valve position can be checked via that monitoring system.	once/month
d. <u>Valve Cycling Test-</u> Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle.	
(i) Valves testable with plant on-line.	once/12 months
(ii) Valves not testable with plant on-line.	once/18 months

- e. System Functional Test- Verification of Proper actuation of this system throughout its operating sequence, and once/18 months
- (i) Verification that each automatic valve in the flow path actuates to its correct position, and
- (ii) Verification that each fire suppression pump starts (sequentially) to maintain fire water suppression system pressure.
- f. Main Fire Pump Capacity and System Flow Check- once/18 months
Verification that each pump develops a flow of 2350 gpm at a system head of 250 feet.
- g. System Flow Test- once/3 years
Performance of a flow test in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association for any portion of this system required for protection of safe shutdown systems.
- h. System Flush (May be done Concurrent with System Flow Test) once/3 years

2. Fire Pump Diesel Engine Testing Requirements:

<u>Item</u>	<u>Frequency</u>
a. Verify that the Fuel Oil Storage Tank contains at least 120 gal. of fuel.	once/month
b. Test diesel fuel sample to verify conformance with diesel manufacturers recommended minimum requirements for viscosity, water, and sediment.	once/3 months

- c. Verify diesel starts from ambient conditions and operates for at least 30 minutes (May be done concurrent with 15 minute diesel pump test). once/month
- d. Conduct a thorough inspection of the diesel in accordance with procedures prepared in conjunction with the manufacturers recommendations and verify that the diesel starts from ambient conditions on the auto-start signal and is operated for greater than or equal to 30 minutes while loaded with the fire pump. once/18 months

3. Fire Pump Diesel Starting 24-Volt Battery Bank and Charger Requirements:

<u>Item</u>	<u>Frequency</u>
a. Verify electrolyte level of each battery is above the plates and that the overall battery voltage is greater than or equal to 24 volts. Also verify that the specific gravity is appropriate for continued service of the battery.	once/month
b. Verify that the batteries, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration and that the battery terminal connections are clean, tight, and free of corrosion.	once/18 months

B. Electrical Tunnel, Diesel Generator Building and Containment Fan Cooler Fire Protection Spray and/or Sprinkler System Testing:

1. Testing Requirements:

<u>Item</u>	<u>Frequency</u>
a. <u>Valve Cycling Test-</u> Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
(i) Valves testable with plant on-line.	once/12 months
(ii) Valves not testable with plant on-line.	once/18 months

- b. System Functional Test- once/18 months
Includes simulated automatic actuation of spray system and verification that automatic valves in the flow path actuate to their correct position.
- c. Spray Header Visual Inspection- once/18 months
To verify integrity.
- d. Visual Inspection of Each Spray Nozzle- once/18 months
To verify that each nozzles spray area is unobstructed.
- e. Air Flow Test- once/3 years
Perform air flow test through each open spray/sprinkler header and verify each open spray/sprinkler nozzle is unobstructed.

2. The requirements of 4.12.B.1 shall not apply to self-actuated type spray nozzles which are capable of only one actuation and cannot be periodically cycled or tested. These self-actuated spray nozzles shall be visually inspected at least once per 18 months to verify that no nozzle damage, exists and that the nozzles are unobstructed.

C. Penetration Fire Barrier Inspection:

- 1. The penetration fire barriers listed in specification 3.14.C.1 shall be verified to be functional by visual inspection:
 - a. At least once per 18 months.
 - b. Prior to declaring a fire penetration barrier functional following repairs or maintenance.

D. Fire Detection Systems Testing:

1. The operability of the fire detection instruments utilized in satisfying the requirements of specification 3.14.D.1 including the actuation of appropriate alarms (Channel Functional Test) shall be verified as follows:

<u>Item</u>	<u>Frequency</u>
a. <u>Smoke Detectors-</u>	
(i) Those which can be tested during plant operation	once/6 months
(ii) Those which cannot be tested during plant operation	once/18 months

b. Heat Detectors-

- (i) Those associated with the Diesel Generator Building (item 5 in Table 3.14-1). once/6 months
- (ii) Those associated with the Electrical Tunnels (item 3 in Table 3.14-1). once/12 months
- (iii) Those associated with the Containment Fan Cooler Units (item 6 in Table 3.14-1). once/18 months

c. Flame Detectors once/6 months

E. Fire Hose Stations Testing:

- 1. Fire hose stations described in specification 3.14.E.1 shall be demonstrated operable by the following surveillance testing requirements:

<u>Item</u>	<u>Frequency</u>
a. <u>Visual Inspection Test-</u> Visual inspection of the hose stations to assure all required equipment is at the station.	once/month
b. <u>Hose Removal Check-</u> Removal of the hose for inspection and replacement of all degraded gaskets in couplings.	once/18 months
c. <u>Hose Flow Test-</u> Partial opening of each hose station valve to verify valve operability and no flow blockage.	once/3 years
d. <u>Hose Hydrostatic Test-</u> Conduct a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.	once/3 years for interior fire hose,

F. Yard Hydrants and Hydrant Hose House Inspection

- | | |
|---|--------------------------------|
| 1. Visually inspect those hoses houses associated with hydrants listed under Table 3.14-3 in order to assure that all required equipment is inside. | once/month |
| 2. Visually inspect those hydrants listed under Table 3.14-3 to verify that the hydrant barrel is dry and undamaged. | once/6 months
(Spring/Fall) |
| 3. For those hydrants serving safety related areas, specifically Hydrants #31, 32, 35, 36, 38, 39 and 310, flow test each hydrant to demonstrate its operability. Conduct a hose hydrostatic test at a pressure at least 50 psi greater than the maximum pressure available at any yard hydrant. Also, inspect all gaskets and replace any degraded gaskets in the couplings. | once/3 years |

G. Low Pressure CO₂ Fire Protection System

1. Those portions of the CO₂ System required to be operable by specification 3.14.G.1 and 3.14.G.2 shall be demonstrated operable by the following surveillance requirements.

- | <u>Item</u> | <u>Frequency</u> |
|---|------------------|
| a. Verify Level and Pressure Indication for CO ₂ Supply Units 3-1 or 3-2 for that unit which is lined up to the Control and Diesel Generator Buildings. | once/week |
| b. System Functional Test:
Verify that system valves and associated ventilation dampers and fire door release mechanisms actuate upon receipt of a simulated actuation signal. | once/18 months |
| c. Verify flow from nozzles during a "Puff Test" | once/18 months |

Basis

These specifications establish the surveillance program for Fire Protection and Detection Systems provided to protect equipment utilized for safe shutdown of the unit. This surveillance program is intended to verify the operability of these systems and will identify for corrective action any conditions which could prevent any portion of the systems performing its intended function.

The Fire Protection and Detection Systems installed at IP-3 conform to Appendix A to Branch Technical Position (BTP) APCS 9.5-1 "Fire Protection for Nuclear Power Plants", as approved by the NRC Regulatory Staff on March 6, 1979, Amendment No. 24 to facility operating license No. DPR-64, and supplements thereto.