

INSTRUMENTATION

FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: Whenever equipment in that fire detection zone is required to be OPERABLE.

ACTION:

With the number of OPERABLE fire detection instrument(s) less than the minimum number of OPERABLE requirements of Table 3.3-10:

- a. Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour unless the instrument(s) is located inside the containment, then inspect the containment at least once per 8 hours or monitor the containment air temperatures at least once per hour at the locations listed in Specification 4.6.1.5.
- b. Restore the inoperable instrument(s) to OPERABLE status within 14 days or, in lieu of any other repair required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each of the above required fire detection instruments which are accessible during plant operation shall be demonstrated OPERABLE at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST. Fire detectors which are not accessible during plant operation shall be demonstrated OPERABLE by the performance of a CHANNEL FUNCTIONAL TEST during each COLD SHUTDOWN exceeding 24 hours unless performed in the previous 6 months.

4.3.3.7.2 The circuitry associated with the supervision of the above fire detection instruments and circuits, per NFPA 72-D, shall be demonstrated OPERABLE at least once per 6 months.

4.3.3.7.3 The non-supervised circuits, associated with detector alarms, between the instrument and the control room shall be demonstrated OPERABLE at least once per 31 days.

TABLE 3.3-10
FIRE DETECTION INSTRUMENTS

<u>Instrument Location (Zone)</u>	<u>Heat</u>		<u>Smoke</u>	
	<u>Total No. of Channels</u>	<u>Minimum Channels Operable</u>	<u>Total No. of Channels</u>	<u>Minimum Channels Operable</u>
1. Containment				
East Penetration (37)	--	--	7	5
West Penetration (41)	--	--	7	5
2. Control Room Vent Duct (42) Z-2				
Control Room Vent Duct (2) Z-1	--	--	1	1
3. Cable Vaults & Areas				
Aux Bldg Cable Vault (25') (10)	5	4	16	12
Turbine Bldg Cable Vault (25') (21)	--	--	9	7
Turbine Bldg Cable Vault (45') (21)	--	--	8	6
Lunch Room Cable Chase Area (36'6") (24)	--	--	4	3
4. 4.16 & 6.9 MW Switchgear Room (54'6") (40)				
4.16 KV Switchgear Room (31'6") (18)	--	--	4	3
480 V Aux Bldg Switchgear Room (36'6") (25)	--	--	4	3
480 V Turbine Bldg Switchgear Room (36'6") (18)	--	--	2	1
West DC Equipment Room (38)	--	--	2	1
East DC Equipment Room (38)	--	--	3	2
5. Battery Rooms				
West Battery Room (14'6") (39)	--	--	1	1
East Battery Room (14'6") (39)	--	--	2	1
6. Electrical Penetration Rooms				
East (14'6") (20)	--	--	3	2
West (14'6") (17)	--	--	2	1

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:
 - 1. Verifying that each pump develops at least 1800 gpm at a system head of 100 psig,
 - 2. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and
 - 3. Verifying that each high pressure pump starts (sequentially) to maintain the fire suppression water system pressure ≥ 75 psig.
- f. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

4.7.9.1.2 The fire pump diesel engine shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying;
 - 1. The fuel storage tank contains at least 125 gallons of fuel, and
 - 2. The diesel starts from ambient conditions and operates for at least 20 minutes.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.
- c. At least once per 18 months by:
 - 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service, and
 - 2. Verifying the diesel starts from ambient conditions on the auto-start signal and operates for ≥ 20 minutes while loaded with the fire pump.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.1.3 The fire pump diesel starting 12-volt batteries and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each battery is above the plates, and
 2. The overall battery voltage is \geq 12 volts.
- b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of the batteries.
- c. At least once per 18 months by verifying that:
 1. The batteries, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration, and
 2. The terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.