

ATTACHMENT 2 TO AEP:NRC;0692BO

PROPOSED REVISED TECHNICAL SPECIFICATION PAGES

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INSTRUMENTATION

FIRE DETECTION INSTRUMENTATION (SYSTEMS/DETECTORS)

LIMITING CONDITION FOR OPERATION

3.3.3.7 Fire detection systems for each fire detection zone shown in Table 3.3-10A through 3.3-10D shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection system(s) is required to be OPERABLE.

ACTION:

When the number of inoperable fire detector(s) is greater than the maximum number of inoperable detectors per zone required by Table 3.3-10A through 3.3-10D:

- a. For Table 3.3-10A, within 1 hour: 1) verify that the wet pipe or dry pilot preaction fire suppression system for the affected area is OPERABLE per Specification 4.7.9.2, or (2) establish a fire watch patrol to inspect the affected area once per hour.
- b. For Table 3.3-10B, within 1 hour: 1) verify that the other cross zoned detection circuit is OPERABLE, or 2) establish a fire watch patrol to inspect the affected area once per hour.
- c. For Table 3.3-10C, within 1 hour establish a fire watch patrol to inspect the affected area or filtration unit once per hour.
- d. For Table 3.3-10D, within 1 hour: 1) establish a fire watch patrol to inspect the containment once per 8 hours, or 2) monitor the containment air temperatures at least once per hour at the locations listed in Specification 4.6.1.5, or 3) view the areas visible to closed circuit television at least once per hour.
- e. The provisions of specifications 3.0.3 and 3.0.4 are not applicable.



INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.3.3.7 The fire detection system for each fire detection zone shown in Tables 3.3-10A through 3.3-10D shall be demonstrated OPERABLE as follows.

4.3.3.7.1 Each of the detectors in the above required fire detection systems 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 supervised detector alarm circuits for the above required fire detection systems shall be demonstrated OPERABLE at least once per 6 months. The supervised detector alarm circuits include the detector circuits, fire and trouble alarm circuits from the remote fire protection control panel to the Control Room emergency fire control panel, and audible fire and trouble alarm circuits.

TABLE 3.3-10A

FIRE DETECTION SYSTEMS

SINGLE ZONE FIRE DETECTION SYSTEMS IN AREAS

CONTAINING WATER SUPPRESSION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Auxiliary Building			
a. Elevation 587 ft.*	27		
b. Elevation 609 ft.*	20		
c. Elevation 633 ft.*	21		
2. Turbine Building			
a. Aux. Feed Water Pump Vestibule*	1		
b. Diesel Generator Ramp/ Corridor	2		

*System protects area common to both Units 1 and 2.

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TABLE 3.3-10B

FIRE DETECTION SYSTEMS

CROSS-ZONED DETECTION SYSTEMS (1)

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Auxiliary Building			
a. 4KV Switchgear (AB)	2		2
b. Engineered Safety System Switchgear and Transformer Room	5		2
c. CRD, Transformer and Switchgear, Inverter and AB Battery Rooms	4		2
2. Cable Tunnels			
a. Quadrant 1 Cable Tunnel	2		1
b. Quadrant 2 Cable Tunnel	3		2
c. Quadrant 3N Cable Tunnel	2		1
d. Quadrant 3M Cable Tunnel	2		1
e. Quadrant 3S Cable Tunnel	1		1
f. Quadrant 4 Cable Tunnel	3		2
3. Cable Spreading Rooms			
a. Switchgear Cable Vault	6		
(Circuit No. 23)			2
(Circuit No. 24)			2
b. Control Room Cable Vault			
(Circuit No. 17)	16		
(Circuit No. 18)	16		
4. Diesel Generator Rooms			
a. Diesel Generator Room 1AB		1	
b. Diesel Generator Room 1CD		1	

(1) Both detection circuits are required for actuation of the fire suppression system.

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TABLE 3.3-10C

FIRE DETECTION SYSTEMSMISCELLANEOUS SINGLE ZONE DETECTION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Auxiliary Building			
a. Elevation 573 ft.*	11		
b. East Main Steam Valve Enclosure	14		
c. Main Steam Line Area El. 612 ft. (Around Containment)	6		
d. NESW Valve Area El. 612 ft.	1		
e. Elevation 650 ft.*	17		
2. Auxiliary Cable Vault (2)	3		
3. Control Room (Includes Detectors Above Suspended Ceiling)	23		
4. Charcoal Filter Ventilation Units (3)			
a. 1-HV-AES-1 Charcoal Filters		None	
b. 1-HV-AES-2 Charcoal Filters		None	
c. 1-HV-ACRF Charcoal Filters		None	
d. 1-HV-CIPX Charcoal Filters		None	

*System protects area common to both Units 1 and 2.

(2) Detection circuit is required for actuation of the fire suppression system.

(3) The Water Spray System for the charcoal filters are manually actuated.

TABLE 3.3-10C (Con't)

FIRE DETECTION SYSTEMS

MISCELLANEOUS SINGLE ZONE DETECTION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
4. Charcoal Filter Ventilation Units Con't			
d. 1-HV-CPR Charcoal Filters		None	
e. 12-HV-AFX* Charcoal Filter		None	
5. Screenhouse			
a. ESW Basement Area Elevation 575 ft.*	2		
b. ESW Pump and MCC Rooms Elevation 591 ft.	4		
6. Pressurizer Heater Transformer Room, Elevation 591 ft.	6		
7. RP Access Control and Chem. Labs, Elevation 609 ft.	12		
8. Diesel Fuel Oil Transfer Pump Room		None	
9. New Fuel Storage Room*	2		

*System protects area common to both Units 1 and 2.

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TABLE 3.3-10D

FIRE DETECTION SYSTEMS

DETECTION SYSTEMS INSIDE CONTAINMENT (4)

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Inside Containment			
a. Quadrant 1 - Cable Trays (5)		8	
b. Quadrant 2 - Cable Trays (5)		1	
c. Quadrant 3 - Cable Trays (5)		10	
d. Quadrant 4 - Cable Trays (5)		6	
e. Reactor Coolant Pump No. 1		None	
f. Reactor Coolant Pump No. 2		None	
g. Reactor Coolant Pump No. 3		None	
h. Reactor Coolant Pump No. 4		None	

(4) The fire detection instruments located within the Containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate tests.

(5) Thermistors located in cable trays are assigned to a quadrant based on the location of the thermistor circuit start point.



INSTRUMENTATION

BASES

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION (SYSTEMS/DETECTORS)

OPERABILITY of the fire detection systems/detectors ensures that adequate detection capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of the fires will reduce the potential for damage to safety related systems or components in the areas of the specified systems and is an integral element in the overall facility fire protection program. In the event that a portion of the fire detection system is inoperable, Actions a through e maintain the facility's fire protection program and allows for continued operation of the facility until the inoperable system(s)/detector(s) are restored to OPERABILITY. However, it is not our intent to rely upon the compensatory action for an extended period of time and action will be taken to restore the minimum number of detectors to OPERABLE status within a reasonable period.

In some cases, the local wet type fire suppression system, or preaction sprinkler system actuation/supervisory air (pneumatic detection system) is used as an alternative to the fire detection system in lieu of a fire watch. In these cases, the wet type suppression or the preaction actuation/supervisory air will serve as the early warning detection of a fire and alert the appropriate Control Room of a problem in the area.

For those areas with cross-zone fire detection, the remaining operable fire detection string will serve as adequate fire detection in lieu of a fire watch until the inoperable fire detection string can be returned to service.

3/4.3.3.8 POST-ACCIDENT INSTRUMENTATION

The OPERABILITY of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables during and following an accident.

The containment water level and containment sump level transmitters will be modified or replaced and OPERABLE by the end of the refueling outage to begin in February 1989.

Amendment 112 (Effective before startup following refueling outage currently scheduled in 2/89.)

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PLANT SYSTEMS

3/4.7.9 FIRE SUPPRESSION SYSTEMS
FIRE SUPPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9.1 The fire suppression water system shall be OPERABLE with:

- a. Two* high demand 2000 GPM pumps, one of which shall be a diesel driven pump, with their discharge aligned to the fire suppression header.
- b. An OPERABLE open flow path capable of taking suction from Lake Michigan and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves and up to the hose station valve(s) or water suppression system controlling valve(s) required to be OPERABLE per Specifications 3.7.9.5 and 3.7.9.2, respectively.

APPLICABILITY: At all times.

ACTION:

- a. With only one pump OPERABLE, restore an inoperable pump (diesel, if required), and equipment to OPERABLE status within 7 days or establish a backup fire suppression water system within the next 7 days.
- b. With the fire suppression water system otherwise inoperable:
 1. Restore the fire suppression water distribution system to OPERABLE status within 24 hours, or
 2. Establish a backup fire suppression water system within 24 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*Shared system with D.C. Cook - Unit 2

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes on recirculation flow.
- b. At least once per 31 days by verifying that each valve (manual, power operated, or automatic) in flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- c. At least once per 6 months by performance of a system flush of above ground internal distribution headers and fire hydrants.
- d. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- e. At least once per 18 months by performing a system functional test which includes:
 1. Verifying that each automatic valve in the flow path actuates to its correct position,
 2. Verifying that each pump develops a flow of at least 2000 gpm at a system head of at least 300 feet of water,
 3. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and
 4. Verifying that each high pressure pump starts in its preplanned sequence to maintain the fire suppression water system pressure greater than or equal to 100 psig.
- f. At least once per 3 years by performing a series of flow tests so that every fire main segment (excluding individual system supplies) has been verified to be clear of obstructions by a full flow test.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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 160 gallons of fuel, and
 2. The diesel starts from ambient conditions and operates for at least 30 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 D4057-81 is within the acceptable limits specified in Table 1 of ASTM-D975-81 when checked for viscosity, water, and sediment.
- c. At least once per 18 months by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

4.7.9.1.3 The fire pump diesel starting battery bank 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 output battery voltage of each bank is greater than 24 volts.
- b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of each battery.
- c. At least once per 18 months by verifying that:
 1. The batteries, cell plates and battery packs show no visual indication of physical damage or abnormal deterioration, and
 2. The battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

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PLANT SYSTEMS

SPRAY AND/OR SPRINKLER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.9.2 The spray and/or sprinkler systems located in the areas shown in Tables 3.7-5A and 3.7-5B shall be OPERABLE:

APPLICABILITY: Whenever equipment in the spray/sprinkler protected area is required to be OPERABLE.

ACTION:

- a. With one or more of the water spray systems as listed in Table 3.7-5A inoperable, within 1 hour: 1) verify that the detection system for the affected filtration unit is OPERABLE per Specification 4.3.3.7, or 2) establish a continuous fire watch patrol.*
- b. With one or more of the sprinkler systems as listed in Table 3.7-5B inoperable, within 1 hour: 1) verify that at least one of the detection systems, where provided, (electric per Specification 4.3.3.7 or pneumatic per Table 3.7-5B) for the affected area is OPERABLE, or 2) establish a continuous fire watch patrol.*
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*For high radiation areas, periodic monitoring (and hourly logging) of the closed circuit television coverage is an acceptable substitute for the fire watch patrol. For high radiation areas where closed circuit television coverage does not exist, an hourly fire watch patrol will be instituted.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.2 Each of the above required water spray and/or sprinkler systems shall be demonstrated to be 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 as provided by Technical Specification 4.7.9.1.1.d.
- b. At least once per 18 months: *
 1. By performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a test signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. By visual inspection of deluge and preaction system piping (this is not required for systems supervised by air) to verify their integrity.
 3. By visual inspection of each open head deluge nozzle to verify that there is no blockage.
- c. At least once per 3 years by performing an air flow test through the piping of each open head deluge system and verifying each open head deluge nozzle is unobstructed.

*The provisions of Specification 4.0.6 are applicable.

TABLE 3.7-5 A

OPEN HEAD DELUGE WATER SPRAY SYSTEMS

<u>LOCATION</u>	<u>ACTUATION</u>
1-HV-AES-1 Charcoal Filters	Manual - Electric - Heat
1-HV-AES-2 Charcoal Filters	Manual - Electric - Heat
1-HV-ACRF-1 Charcoal Filters	Manual - Electric - Heat
1-HV-CPR-1 Charcoal Filters	Manual - Electric - Heat
12-HV-AFX Charcoal Filters*	Manual - Electric - Heat
1-HV-CIPX Charcoal Filters	Manual - Electric - Heat

*Shared system with Unit 2.



TABLE 3.7-5 B

CLOSED HEAD SPRINKLER SYSTEMS

<u>LOCATION</u>	<u>TYPE SYSTEM</u>	<u>ACTUATION</u>
Auxiliary building El. 587 ft.*/*** (Normally accessible areas, charging and Safety Injection Pump Rooms, stairways to El. 573 and 609)	Preaction Sprinkler	Dry Pilot**
Auxiliary building El. 609 ft.*/*** (Normally accessible areas, CCW Pump area, stairways to El. 633 and 620 above Chem. Lab)	Preaction Sprinkler	Dry Pilot**
Auxiliary building El. 633 ft.*/*** (Normally accessible areas, excluding HVAC Vestibule Areas and stairways to El. 650)	Preaction Sprinkler	Dry Pilot**
Auxiliary Feedwater Pump Corridor*/***	Wet Pipe	Automatic
Turbine Building El. 591 Generator End (Extended to Diesel Generator Corridor***)	Wet Pipe	Automatic
Auxiliary Building Cask Handling Area (El. 609)*/***	Preaction Sprinkler	Dry Pilot**
Auxiliary Building Drumming Room (El. 587)*/***	Preaction Sprinkler	Dry Pilot**
Reactor Coolant Pumps (4)***	Preaction Sprinkler	Manual
Contractors Access Control Building (El. 612)	Wet Pipe	Automatic

*System protects area common to both Units 1 and 2.

**Dry Pilot Actuation is considered to be a heat actuated pneumatic type
detection system.

***Located in areas which also have an automatic detection system.



PLANT SYSTEMS

LOW PRESSURE CO₂ SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.9.3 The low pressure CO₂ systems located in the areas shown in Table 3.7-6 shall be OPERABLE.

APPLICABILITY: Whenever equipment in the low pressure CO₂ protected areas is required to be OPERABLE.

ACTION:

- a. With one or more of the required low pressure CO₂ systems isolated from automatic operation for personnel protection, verify that at least one zone of fire detection for the affected area is OPERABLE per Specification 4.3.3.7 in order to permit entry for routine tours, maintenance, construction, or surveillance testing.
- b. With one or more of the required CO₂ systems shown in Table 3.7-6 inoperable, within 1 hour: 1) verify at least one zone of fire detection for the affected area is OPERABLE per Specification 4.3.3.7, and establish a fire watch patrol to inspect the affected fire area once per hour, or 2) Establish a continuous fire watch to patrol the affected area.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.3 Each of the above required low pressure CO₂ systems shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the CO₂ storage tank level to be greater than or equal to 50% and pressure to be greater than or equal to 285 psig, and
- b. At least once per 31 days by verifying that each manual valve in the flow path is in the correct position.
- c. At least once per 18 months by verifying:
 1. The systems valves, associated ventilation dampers and fans, and self-closing fire doors operate automatically upon receipt of a simulated actuation signal, and
 2. System actuation methods (automatic from detection system, manual pushbutton station, manual pneumatic release) are tested to verify proper actuation of the system.
 3. Flow from each nozzle during performance of an airflow or CO₂ "Puff Test".



TABLE 3.7-6

LOW PRESSURE CARBON DIOXIDE SYSTEMS

17 TON CAPACITY

<u>LOCATION</u>	<u>ACTUATION METHOD</u>
Diesel Generator 1AB Room	Cross-zoned Heat
Diesel Generator 1CD Room	Cross-zoned Heat
Diesel Generator Fuel Oil Pump Room	Heat
4KV Switchgear Rooms	Manual
Control Rod Drive, Transf. Switchgear Rooms	Manual
Engineered Safety Switchgear Room	Manual
Switchgear Room Cable Vault	Cross-zoned Ionization and Infrared
Auxiliary Cable Vault	Ionization
Control Room Cable Vault (Backup)*	Manual
Penetration Cable Tunnel Quadrant 1	Manual
Penetration Cable Tunnel Quadrant 2	Manual
Penetration Cable Tunnel Quadrant 3N	Manual
Penetration Cable Tunnel Quadrant 3M	Manual
Penetration Cable Tunnel Quadrant 3S	Manual
Penetration Cable Tunnel Quadrant 4	Manual

*Control Room Cable Vault CO₂ System is only required to be operable when the Cable Vault Halon System² is inoperable.

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PLANT SYSTEMS

HALON SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9.4 The Halon system located in the Control Room Cable Vault shall be OPERABLE.

APPLICABILITY: Whenever equipment in the Halon protected area is required to be OPERABLE.

ACTION:

- a. With the Halon System isolated from automatic operation for personnel protection, verify that at least one zone of fire detection for the affected area is OPERABLE in order to permit entry into the cable vault.
- b. With the above required Halon system inoperable, within 1 hour:
 - 1) verify that at least one zone of the fire detection system and the backup CO₂ fire suppression system for the affected area are OPERABLE per Specifications 4.3.3.7 and 4.7.9.3 respectively, or
 - 2) establish a continuous fire watch patrol.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.4 The above required Halon system shall be demonstrated OPERABLE:

- a. At least once per 6 months by verifying each Halon storage tank to be greater than or equal to 95% of full charge weight or appropriate liquid level, and to be greater than or equal to 90% of full charge pressure corrected for ambient temperature.
- b. At least once per 18 months by:
 1. Verifying the system (including associated ventilation dampers and fans, and doors) is tested for proper operation by a simulated actuation signal.
 2. System actuation methods (automatic from detection system, manual pushbutton station, and manual cylinder actuator) are to be tested to verify proper actuation of the system.
 3. Performance of an air flow test or CO₂ puff test through headers and nozzles to assure that there is no blockage.

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PLANT SYSTEMS

FIRE HOSE STATIONS

LIMITING CONDITION FOR OPERATION

3.7.9.5 The fire hose stations shown in Table 3.7-7 shall be OPERABLE:

APPLICABILITY: Whenever equipment in the areas protected by the fire hose stations is required to be OPERABLE.

ACTION:

- a. With one or more of the fire hose stations shown in Table 3.7-7 inoperable: 1) For those areas where the inoperable fire hose station is the primary means of fire suppression (areas where no fixed systems are provided or areas where the fixed systems are inoperable), within 1 hour, route an additional equivalent capacity fire hose to the affected area(s), from an OPERABLE hose station(s) per Specification 4.7.9.5, or 2) within 1 hour, verify that the fixed fire suppression system(s) that also protects the affected area(s) serviced by the fire hose station(s) is OPERABLE.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.5 Each of the fire hose stations shown in Table 3.7-7 shall be demonstrated OPERABLE:

- a. At least once per 31 days by a visual inspection of the fire hose stations to assure all required equipment is at the station.
- b. At least once per 18 months by:
 1. Removing the hose for visual inspection and re-racking, and
 2. Replacement of all degraded gaskets in couplings.
- c. At least once per 3 years by:
 1. Partially opening each hose station valve to verify OPERABILITY and no flow blockage.
 2. Conducting a hose hydrostatic test at a pressure of 150 psig or at least 50 psi greater than the maximum pressure available at that hose station, whichever is greater.

TABLE 3.7-7

FIRE HOSE STATIONS

Auxiliary Building**	Minimum 12*
Access to Diesel Generator Rooms	Hose Station No. 32
Access to Switchgear Rooms	Hose Station No. 58 or No. 211
Access to Control Room	Hose Station No. 82 or No. 81
Access to Pressurizer Heater Transformer Room	Hose Station No. 31
Access to ESW Pump Rooms, MCC Room, and ESW Basement Area	Hose Station No. 23
Access to Auxiliary Feed Pump Rooms	Hose Station No. 35

*Shared with Unit 2

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PLANT SYSTEMS

3/4.7.10 FIRE RATED ASSEMBLIES

LIMITING CONDITION FOR OPERATION

3.7.10 Fire rated assemblies shall be OPERABLE as follows:

- a. All fire rated assemblies (walls, floor/ceilings, and cable tray and conduit enclosures), separating safety related fire areas or separating portions of redundant systems important to safe shutdown within a fire area shall be OPERABLE.
- b. All penetration sealing devices (fire door assemblies, fire dampers, and penetration seals for cable, around conduit, cable tray, piping and ventilation ductwork) in the above fire rated assemblies shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With any of the above fire rated assemblies and/or sealing devices inoperable, within 1 hour: 1) verify that the fire detectors and/or fire suppression system on at least one side of the inoperable assembly are OPERABLE, or 2) establish a continuous fire watch patrol on one side of the penetration, or 3) secure the inoperable sealing device* in the closed position, and establish an hourly fire watch, or (4) for fire dampers and normally locked fire doors, secure the inoperable sealing device in the closed position.
- b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.10.1 At least once per 18 months the above required fire rated assemblies and penetration sealing devices shall be verified OPERABLE by:

- a. Performing a visual inspection of all accessible surfaces, of each fire rated assembly, for open penetrations.
- b. Performing a visual inspection of each fire damper and its associated hardware.
- c. Performing a Functional Test, requiring closure testing on 10% of the fire dampers.**

*Except fire doors on Turbine Driven Auxiliary Feedwater Pump and Hallway enclosures which must remain open due to HELB considerations.

**This testing is in addition to the testing required by Specifications 4.7.9.3.c.1 and 4.7.9.4.b.1.

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Page 44

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS Con't

- d. Performing a visual inspection of at least 10 percent of each type of penetration seal (cable, around conduit, cable tray, piping, and ventilation duct work penetration seals; and cable tray and conduit enclosures required for Appendix R compliance). If apparent changes in appearance or abnormal degradations are found that could indicate a plant wide trend, a visual inspection of an additional 10 percent of each type of penetration seal shall be made. This inspection process shall continue until a 10 percent sample with no apparent changes in appearance or abnormal degradation is found.

4.7.10.2 Each of the required fire doors shall be verified OPERABLE by:

- a. Inspecting the hold-open, release, and closing mechanism and latches at least once per 6 months.
- b. Verifying the position of each closed fire door at least once per 24 hours.
- c. Verifying that doors with hold-open and release mechanisms are free of obstructions at least once per 24 hours.
- d. Verifying the position of each locked closed fire door at least once per 7 days.

4.7.10.3 Following repairs or maintenance on an above required fire rated assembly or sealing device, the fire rated assembly or sealing device shall be verified to be operable before exiting the applicable action statement.

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BASES

3/4.7.9 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression systems consists of the water system, spray and/or sprinklers, CO₂, Halon, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety-related equipment and is a major element in the facility fire protection program.

In the event that one or more CO₂ Suppression System requiring automatic actuation must be isolated for personal protection to permit entry for routine tours, maintenance, construction, or surveillance testing in the protected area, the fire detection system(s) required to be operable by Specification 3.3.3.7 shall be verified to be operable. Isolation of an automatic CO₂ suppression system temporarily puts this system in a manual actuation mode.

Reliance on the fire detection system, in conjunction with the ability to manually discharge the CO₂ suppression system will provide adequate fire protection for periods when personnel are required to work in these areas.

In the event that portions of the fire protection systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression. Backup fire protection equipment will normally take the form of permanently mounted fire extinguishers and/or fire hose stations in or near the area, or fire hoses routed to the affected area. However, it is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire suppression system to OPERABLE status within a reasonable period.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon and CO₂ in the storage tanks by verifying either the weight, level, or pressure of the tanks.

In the event the fire suppression water becomes inoperable, corrective measures must be taken since this system provides the major fire suppression capability of the plant. The corrective measures, including verification of fire detection operability, or roving fire watches, or alternate/backup suppression equipment, or systems, shall provide adequate fire suppression capability for the continued protection of the nuclear plant.



BASES

3/4.7.9 Con't

The purpose of the charcoal filter fire suppression Technical Specification is to account for detection and suppression of fires in the charcoal filters. Manual operation of these systems is allowed because two-point heat detection with control room and local annunciation of trouble conditions is provided for the charcoal filters. The OPERABILITY of the fire suppression system protecting the charcoal filters is only required when there is charcoal in the filters and the filters are required to be operable. Actuation of spray water onto the charcoal filters requires both the manual opening of the system isolation valve and reaching the high temperature alarm setpoint for the automatic opening of the system deluge valve.

Because of the inaccessibility of the lower containment to personnel during operation due to ALARA radiation exposure concerns, the use of one or more CCTVs in the lower containment to monitor for fire and smoke is an acceptable substitute to an hourly fire watch, if the fire suppression system becomes inoperable.

All hourly fire watch patrols are performed at intervals of sixty minutes with a margin of fifteen minutes.

A continuous fire watch requires that a trained individual be in the specified area at all times and that each fire zone within the specified area be patrolled at least once every fifteen minutes with a margin of five minutes.

A control valve is defined as a valve that when closed does not leave an alternate open flow path to a system. A sectionalizing valve is defined as a valve that when closed does not prevent an alternate open flow path to a system and hence does not make the fire suppression water system inoperable. Under certain situations, the closure of a sectionalizing valve followed by the closure of a second valve will not leave an open flow path to one of the specified systems. In this instance, Action Statement b of Specification 3.7.9.1 is applicable.

Manual actuation of CO2 fire suppression systems provides adequate fire protection for the protected areas based on operable fire detection in the area, low combustible loadings, and prompt fire brigade response to alarms.

Many of the action statements take credit for operable fire detection in lieu of a fire watch when a fire protection system is inoperable. Operable fire detection provides sufficient early warning capability of a fire to the appropriate Control Room.

3/4.7.10 FIRE RATED ASSEMBLIES

The OPERABILITY of the fire barriers and barrier penetrations ensure that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to

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BASES

3/4.7.10 Con't

detection and extinguishment. The fire barriers and fire barrier penetrations sealing are devices periodically inspected to verify their OPERABILITY. The functional testing of the fire dampers is provided to ensure that the dampers remain functional. The ventilation seals area seals around ventilation duct work penetrating fire barriers. It is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire rated assembly to OPERABLE status within a reasonable period.

For the purpose of determining OPERABILITY, an OPERABLE fire rated assembly and/or sealing device is one that is capable of performing its intended safety function.

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ADMINISTRATIVE CONTROLS

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference Specifications:

- a. Inservice Inspection Program Review, Specification 4.4.10
- b. ECCS Actuation, Specifications 3.5.2 and 3.5.3
- c. Inoperable Seismic Monitoring Instrumentation, Specification 3.3.3.3
- d. Inoperable Meteorological Monitoring Instrumentation, Specification 3.3.3.4
- e. Seismic Event Analysis, Specification 4.3.3.3.2
- f. Sealed Source Leakage in Excess of Limits, Specification 4.7.7.1.3
- g. Deleted
- h. Deleted

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INSTRUMENTATION

FIRE DETECTION INSTRUMENTATION (SYSTEMS/DETECTORS)

LIMITING CONDITION FOR OPERATION

3.3.3.8 Fire detection systems for each fire detection zone shown in Table 3.3-11A through 3.3-11D shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection system(s) is required to be OPERABLE.

ACTION

When the number of inoperable fire detector(s) is greater than the maximum number of inoperable detectors per zone required by Table 3.3-11A through 3.3-11D:

- a. For Table 3.3-11A, within 1 hour: 1) verify that the wet pipe or dry pilot preaction fire suppression system for the affected area is OPERABLE per Specification 4.7.9.2, or (2) establish a fire watch patrol to inspect the affected area once per hour.
- b. For Table 3.3-11B, within 1 hour: 1) verify that the other cross zoned detection circuit is operable, or 2) establish a fire watch patrol to inspect the affected area once per hour.
- c. For Table 3.3-11C, within 1 hour establish a fire watch patrol to inspect the affected area or filtration unit once per hour.
- d. For Table 3.3-11D, within 1 hour: 1) establish a fire watch patrol to inspect the containment once per 8 hours, or 2) monitor the containment air temperatures at least once per hour at the locations listed in Specification 4.6.1.5, or 3) view the areas visible to closed circuit television at least once per hour.
- e. The provisions of specifications 3.0.3 and 3.0.4 are not applicable.

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INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.3.3.8 The fire detection system for each fire detection zone shown in Tables 3.3-11A through 3.3-11D shall be demonstrated OPERABLE as follows.

4.3.3.8.1 Each of the detectors in the above required fire detection systems 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.

4.3.3.8.2 The supervised detector alarm circuits for the above required fire detection systems shall be demonstrated OPERABLE at least once per 6 months. The supervised detector alarm circuits include the detector circuits, fire and trouble alarm circuits from the remote fire protection control panel to the Control Room emergency fire control panel, and audible fire and trouble alarm circuits.

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TABLE 3.3-11A
FIRE DETECTION SYSTEMS

SINGLE ZONE FIRE DETECTION SYSTEMS IN AREAS
CONTAINING WATER SUPPRESSION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke</u> <u>(Ionization)</u>	<u>Heat</u> <u>(Thermistor)</u>	<u>Optical</u> <u>(Infrared)</u>
1. Auxiliary Building			
a. Elevation 587 ft.*	27		
b. Elevation 609 ft.*	20		
c. Elevation 633 ft.*	21		
2. Turbine Building			
a. Aux. Feed Water Pump Vestibule*	1		
b. Diesel Generator Ramp/ Corridor	2		

*System protects area common to both Units 1 and 2.

TABLE 3.3-11B

FIRE DETECTION SYSTEMSCROSS-ZONED DETECTION SYSTEMS (1)

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Auxiliary Building			
a. 4KV Switchgear (AB)	2		2
b. Engineered Safety System Switchgear and Transformer Room	5		2
c. CRD, Transformer and Switchgear, Inverter and AB Battery Rooms	4		2
2. Cable Tunnels			
a. Quadrant 1 Cable Tunnel	2		1
b. Quadrant 2 Cable Tunnel	3		2
c. Quadrant 3N Cable Tunnel	1		1
d. Quadrant 3M Cable Tunnel	2		1
e. Quadrant 3S Cable Tunnel	2		1
f. Quadrant 4 Cable Tunnel	3		2
3. Cable Spreading Rooms			
a. Switchgear Cable Vault	6		
(Circuit No. 27)			2
(Circuit No. 28)			2
b. Control Room Cable Vault			
(Circuit No. 12)	19		
(Circuit No. 13)	19		
4. Diesel Generator Rooms			
a. Diesel Generator Room 2AB		1	
b. Diesel Generator Room 2CD		1	

(1) Both detection circuits are required for actuation of the fire suppression system.

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TABLE 3.3-11C

FIRE DETECTION SYSTEMSMISCELLANEOUS SINGLE ZONE DETECTION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Auxiliary Building			
a. Elevation 573 ft.*	11		
b. East Main Steam Valve Enclosure	14		
c. Main Steam Line Area El. 612 ft. (Around Containment)	6		
d. NESW Valve Area El. 612 ft.	1		
e. Elevation 650 ft.*	17		
2. Auxiliary Cable Vault (2)	3		
3. Control Room (Includes Detectors Above Suspended Ceiling)	21		
4. Charcoal Filter Ventilation Units (3)			
a. 2-HV-AES-1 Charcoal Filters		None	
b. 2-HV-AES-2 Charcoal Filters		None	
c. 2-HV-ACRF Charcoal Filters		None	
d. 2-HV-CIPX Charcoal Filters		None	

*System protects area common to both Units 1 and 2.

(2) Detection circuit is required for actuation of the fire suppression system.

(3) The Water Spray System for the charcoal filters are manually actuated.

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TABLE 3.3-11C

FIRE DETECTION SYSTEMSMISCELLANEOUS SINGLE ZONE DETECTION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
4. Charcoal Filter Ventilation Units Con't			
d. 2-HV-CPR Charcoal Filters		None	
e. 12-HV-AFX* Charcoal Filters		None	
5. Screenhouse			
a. ESW Basement Area Elevation 575 ft.*	2		
b. ESW Pump and MCC Rooms Elevation 591 ft.	4		
6. Pressurizer Heater Transformer Room, Elevation 591 ft.	6		
7. Diesel Fuel Oil Transfer Pump Room		None	
8. New Fuel Storage Room*	2		

*System protects area common to both Units 1 and 2.



TABLE 3.3-11C

FIRE DETECTION SYSTEMS

MISCELLANEOUS SINGLE ZONE DETECTION SYSTEMS

<u>System Location</u>	<u>Maximum Inoperable Detectors/Zone</u>		
	<u>Smoke (Ionization)</u>	<u>Heat (Thermistor)</u>	<u>Optical (Infrared)</u>
1. Inside Containment			
a. Quadrant 1 - Cable Trays (5)		7	
b. Quadrant 2 - Cable Trays (5)		2	
c. Quadrant 3 - Cable Trays (5)		15	
d. Quadrant 4 - Cable Trays (5)		7	
e. Reactor Coolant Pump No. 1		None	
f. Reactor Coolant Pump No. 2		None	
g. Reactor Coolant Pump No. 3		None	
h. Reactor Coolant Pump No. 4		None	

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- (4) The fire detection instruments located within the Containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate tests.
- (5) Thermistors located in cable trays are assigned to a quadrant based on the location of the thermistor circuit start point.



3/4.3 INSTRUMENTATION

BASES

3/4.3.3.8 FIRE DETECTION INSTRUMENTATION (SYSTEMS/DETECTORS)

OPERABILITY of the fire detection systems/detectors ensures that adequate detection capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of the fires will reduce the potential for damage to safety related systems or components in the areas of the specified systems and is an integral element in the overall facility fire protection program. In the event that a portion of the fire detection system is inoperable, Actions a through e maintain the facility's fire protection program and allows for continued operation of the facility until the inoperable system(s)/detector(s) are restored to OPERABILITY. However, it is not our intent to rely upon the compensatory action for an extended period of time and action will be taken to restore the minimum number of detectors to OPERABLE status within a reasonable period.

In some cases, the local wet type fire suppression system, or preaction sprinkler system actuation/supervisory air (pneumatic detection system) is used as an alternative to the fire detection system in lieu of a fire watch. In these cases, the wet type suppression or the preaction actuation/supervisory air will serve as the early warning detection of a fire and alert the appropriate Control Room of a problem in the area.

For those areas with cross zone fire detection, the remaining operable fire detection string will serve as adequate fire detection in lieu of a fire watch until the inoperable fire detection string can be returned to service.

3/4.3.3.9 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases. The alarm/trip setpoints for these instruments shall be calculated in accordance with NRC approved methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria specified in Section 11.3 of the Final Safety Analysis Report for the Donald C. Cook Nuclear Plant.

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3/4.3 INSTRUMENTATION

BASES

3/4.3.3.10 RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

The radioactive effluent gaseous instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases. The alarm/trip setpoints for these instruments shall be calculated in accordance with NRC approved methods in the OCDM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. This instrumentation also includes provisions for monitoring the concentrations of potentially explosive gas mixtures in the waste gas holdup system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria specified in Section 11.3 of the Final Safety Analysis Report for the Donald C. Cook Nuclear Plant.

3/4.3.4 TURBINE OVERSPEED PROTECTION

This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety related components, equipment or structures.

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PLANT SYSTEMS

3/4.7.9 FIRE SUPPRESSION SYSTEMS
FIRE SUPPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9.1 The fire suppression water system shall be OPERABLE with:

- a. Two* high demand 2000 GPM pumps, one of which shall be a diesel driven pump, with their discharge aligned to the fire suppression header.
- b. An OPERABLE open flow path capable of taking suction from Lake Michigan and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves and up to the hose station valve(s) or water suppression system controlling valve(s) required to be OPERABLE per Specifications 3.7.9.5 and 3.7.9.2, respectively.

APPLICABILITY: At all times.

ACTION:

- a. With only one pump operable, restore an inoperable pump (diesel, if required), and equipment to OPERABLE status within 7 days or establish a backup fire suppression water system within the next 7 days.
- b. With the fire suppression water system otherwise inoperable:
 1. Restore the fire suppression water distribution system to OPERABLE status within 24 hours, or
 2. Establish a backup fire suppression water system within 24 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*Shared system with D. C. Cook - Unit 1

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by starting each pump and operating it for at least 15 minutes on recirculation flow.
- b. At least once per 31 days by verifying that each valve (manual, power operated, or automatic) in flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- c. At least once per 6 months by performance of a system flush of above ground internal distribution headers and fire hydrants.
- d. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- e. At least once per 18 months by performing a system functional test which includes:
 1. Verifying that each automatic valve in the flow path actuates to its correct position,
 2. Verifying that each pump develops a flow of at least 2000 gpm at a system head of at least 300 feet of water,
 3. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and
 4. Verifying that each high pressure pump starts in its preplanned sequence to maintain the fire suppression water system pressure greater than 100 psig.
- f. At least once per 3 years by performing a series of flow tests so that every fire main segment (excluding individual system supplies) has been verified to be clear of obstructions by a full flow test.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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 160 gallons of fuel, and
 2. The diesel starts from ambient conditions and operates for at least 30 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-D4057-81 is within the acceptable limits specified in Table 1 of ASTM-D975-81 when checked for viscosity, water, and sediment.
- c. At least once per 18 months by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

4.7.9.1.3 The fire pump diesel starting battery bank 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 output battery voltage of each bank is greater than 24 volts.
- b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of each battery.
- c. At least once per 18 months by verifying that:
 1. The batteries, cell plates and battery packs show no visual indication of physical damage or abnormal deterioration, and
 2. The battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.



PLANT SYSTEMS

SPRAY AND/OR SPRINKLER SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.9.2 The spray and/or sprinkler systems located in the areas shown in Tables 3.7-5A and 3.7-5B shall be OPERABLE:

APPLICABILITY: Whenever equipment in the spray/sprinkler protected area is required to be OPERABLE.

ACTION:

- a. With one or more of the water spray systems as listed in Table 3.7-5A inoperable, within 1 hour: 1) verify that the detection system for the affected filtration unit is OPERABLE per Specification 4.3.3.8, or 2) establish a continuous fire watch patrol.*
- b. With one or more of the sprinkler systems as listed in Table 3.7-5B inoperable, within 1 hour: 1) verify that at least one of the detection systems, where provided (electric per Specification 4.3.3.7 or pneumatic per Table 3.7-5B) for the affected area is OPERABLE, or 2) establish a continuous fire watch patrol.*
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*For high radiation areas, periodic monitoring (and hourly logging) of the closed circuit television coverage is an acceptable substitute for the fire watch patrol. For high radiation areas where closed circuit television coverage does not exist, an hourly fire watch patrol will be instituted.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.2 Each of the above required water spray and/or sprinkler systems shall be demonstrated to be 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 as provided by Technical Specification 4.7.9.1.1.d.
- b. At least once per 18 months:*
 1. By performing a system functional test which includes simulated automatic actuation of the system, and:
 - a) Verifying that the automatic valves in the flow path actuate to their correct positions on a test signal, and
 - b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.
 2. By visual inspection of deluge and preaction system piping (this is not required for systems supervised by air) to verify their integrity.
 3. By visual inspection of each open head deluge nozzle to verify that there is no blockage.
- c. At least once per 3 years by performing an air flow test through the piping of each open head deluge system and verifying each open head deluge nozzle is unobstructed.

*The provisions of Specification 4.0.6 are applicable.

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TABLE 3.7-5 A

OPEN HEAD DELUGE WATER SPRAY SYSTEMS

LOCATION

ACTUATION

2-HV-AES-1 Charcoal Filters
2-HV-AES-2 Charcoal Filters
2-HV-ACRF-1 Charcoal Filters
2-HV-CPR-1 Charcoal Filters
2-HV-CIPX Charcoal Filters
12-HV-AFX Charcoal Filters*

Manual - Electric - Heat
Manual - Electric - Heat
Manual - Electric - Heat
Manual - Electric - Heat
Manual - Electric - Heat
Manual - Electric - Heat

*Shared system with Unit 1.

COOK NUCLEAR PLANT - UNIT 2

3/4 7-41

AMENDMENT NO.



TABLE 3.7-5 B

CLOSED HEAD SPRINKLER SYSTEMS

<u>LOCATION</u>	<u>TYPE SYSTEM</u>	<u>ACTUATION</u>
Auxiliary building El. 587 ft.*/*** (Normally accessible areas, charging and Safety Injection Pump Rooms, stairways to El. 573 and 609)	Preaction Sprinkler	Dry Pilot**
Auxiliary building El. 609 ft.*/*** (Normally accessible areas, CCW Pump area, stairways to El. 633)	Preaction Sprinkler	Dry Pilot**
Auxiliary building El. 633 ft.*/*** (Normally accessible areas, excluding HVAC Vestibule Areas and stairways to El. 650)	Preaction Sprinkler	Dry Pilot**
Auxiliary Turbine Driven Feedwater Pump and Pump Corridor*/***	Wet Pipe	Automatic
Turbine Building 591 ft. El. Generator End (Extended to Diesel Generator Corridor***)	Wet Pipe	Automatic
Auxiliary Building Cask Handling Area (El. 609) */***	Preaction Sprinkler	Dry Pilot**
Auxiliary Building Drumming Area (El. 587)*/***	Preaction Sprinkler	Dry Pilot**
Reactor Coolant Pumps (4)***	Preaction Sprinkler	Manual

*System protects area common to both Units 1 and 2.

**Dry Pilot Actuation is considered to be a heat actuated pneumatic type
detection system.

***Located in areas which also have an automatic detection system.

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PLANT SYSTEMS

LOW PRESSURE CO₂ SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.9.3 The low pressure CO₂ systems located in the areas shown in Table 3.7-6 shall be OPERABLE.

APPLICABILITY: Whenever equipment in the low pressure CO₂ protected areas is required to be OPERABLE.

ACTION:

- a. With one or more of the required low pressure CO₂ systems isolated from automatic operation for personnel protection, verify that at least one zone of fire detection for the affected area is OPERABLE per Specification 4.3.3.8 in order to permit entry for routine tours, maintenance, construction, or surveillance testing.
- b. With one or more of the required CO₂ systems shown in Table 3.7-6 inoperable, within 1 hour: 1) verify at least one zone of fire detection for the affected area is OPERABLE per Specification 4.3.3.8, and establish a fire watch patrol to inspect the affected fire area once per hour, or 2) Establish a continuous fire watch to patrol the affected area.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.3 Each of the above required low pressure CO₂ systems shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the CO₂ storage tank level to be greater than or equal to 50% and pressure to be greater than or equal to 285 psig, and
- b. At least once per 31 days by verifying that each manual valve in the flow path is in the correct position.
- c. At least once per 18 months by verifying:
 1. The systems valves, associated ventilation dampers and fans, and self-closing fire doors operate automatically upon receipt of a simulated actuation signal, and
 2. System actuation methods (automatic from detection system, manual pushbutton station, manual pneumatic release) are tested to verify proper actuation of the system.
 3. Flow from each nozzle during performance of an air flow or CO₂ "Puff Test".

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TABLE 3.7-6

LOW PRESSURE CARBON DIOXIDE SYSTEMS

17 TON CAPACITY

<u>LOCATION</u>	<u>ACTUATION METHOD</u>
Diesel Generator 2AB Room	Cross-Zoned Heat
Diesel Generator 2CD Room	Cross-Zoned Heat
Diesel Generator Fuel Oil Pump Room	Heat
4KV Switchgear Rooms	Manual
Control Rod Drive, Transf. Switchgear Rooms	Manual
Engineered Safety Switchgear Room	Manual
Switchgear Room Cable Vault	Cross-Zoned Ionization and Infrared
Auxiliary Cable Vault	Ionization
Control Room Cable Vault (Backup)*	Manual
Penetration Cable Tunnel Quadrant 1	Manual
Penetration Cable Tunnel Quadrant 2	Manual
Penetration Cable Tunnel Quadrant 3N	Manual
Penetration Cable Tunnel Quadrant 3M	Manual
Penetration Cable Tunnel Quadrant 3S	Manual
Penetration Cable Tunnel Quadrant 4	Manual

*Control Room Cable Vault CO₂ System is only required to be operable when the Cable Vault Halon System is inoperable.

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PLANT SYSTEMS

HALON SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9.4 The Halon system located in the Control Room Cable Vault shall be OPERABLE.

APPLICABILITY: Whenever equipment in the Halon protected area is required to be OPERABLE.

ACTION:

- a. With the Halon System isolated from automatic operation for personnel protection, verify that at least one zone of fire detection for the affected area is OPERABLE in order to permit entry into the cable vault.
- b. With the above required Halon system inoperable, within 1 hour:
1) verify that at least one zone of the fire detection system and the backup CO₂ fire suppression system for the affected area are OPERABLE per Specifications 4.3.3.8 and 4.7.9.3 respectively, or 2) establish a continuous fire watch patrol.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.4 The above required Halon system shall be demonstrated OPERABLE:

- a. At least once per 6 months by verifying each Halon storage tank to be greater than or equal to 95% of full charge weight or appropriate liquid level, and to be greater than or equal to 90% of full charge pressure corrected for ambient temperature.
- b. At least once per 18 months by:
 1. Verifying the system (including associated ventilation dampers and fans, and doors) is tested for proper operation by a simulated actuation signal.
 2. System actuation methods (automatic from detection system, manual pushbutton station, and manual cylinder actuator) are to be tested to verify proper actuation of the system.
 3. Performance of an air flow test or CO₂ puff test through headers and nozzles to assure that there is no blockage.

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PLANT SYSTEMS

FIRE HOSE STATIONS

LIMITING CONDITION FOR OPERATION

3.7.9.5 The fire hose stations shown in Table 3.7-7 shall be OPERABLE:

APPLICABILITY: Whenever equipment in the areas protected by the fire hose stations is required to be OPERABLE.

ACTION:

- a. With one or more of the fire hose stations shown in Table 3.7-7 inoperable: 1) For those areas where the inoperable fire hose station is the primary means of fire suppression (areas where no fixed systems are provided or areas where the fixed systems are inoperable), within 1 hour, route an additional equivalent capacity fire hose to the affected area(s) from an OPERABLE hose station(s) per Specification 4.7.9.5, or 2) within 1 hour, verify that the fixed fire suppression system(s) that also protects the affected area(s) serviced by the fire hose station(s) is OPERABLE.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.5 Each of the fire hose stations shown in Table 3.7-7 shall be demonstrated OPERABLE:

- a. At least once per 31 days by a visual inspection of the fire hose stations to assure all required equipment is at the station.
- b. At least once per 18 months by:
 1. Removing the hose for visual inspection and re-racking, and
 2. Replacement of all degraded gaskets in couplings.
- c. At least once per 3 years by:
 1. Partially opening each hose station valve to verify OPERABILITY and no flow blockage.
 2. Conducting a hose hydrostatic test at a pressure of 150 psig or at least 50 psi greater than the maximum pressure available at that hose station, whichever is greater.

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TABLE 3.7-7

FIRE HOSE STATIONS

Auxiliary Building**	Minimum 12*
Access to Diesel Generator Rooms	Hose Station No. 7
Access to Switchgear Rooms	Hose Station No. 45 or No. 212
Access to Control Room	Hose Station No. 65 or No. 81
Access to Pressurizer Heater Transformer Room	Hose Station No. 12
Access to ESW Pump Rooms, MCC Room, and ESW Basement Area	Hose Station No. 20
Access to Auxiliary Feed Pump Rooms	Hose Station No. 9

*Shared with Unit 1

**Within the Controlled Area

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PLANT SYSTEMS

3/4.7.10 FIRE RATED ASSEMBLIES

LIMITING CONDITION FOR OPERATION

3.7.10 Fire rated assemblies shall be OPERABLE as follows:

- a. All fire rated assemblies (walls, floor/ceilings, and cable tray and conduit enclosures), separating safety related fire areas or separating portions of redundant systems important to safe shutdown within a fire area shall be OPERABLE.
- b. All penetration sealing devices (fire door assemblies, fire dampers, and penetration seals for cable, around conduit, cable tray, piping and ventilation ductwork) in the above fire rated assemblies shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With any of the above fire rated assemblies and/or sealing devices inoperable, within 1 hour: 1) verify that the fire detectors and/or fire suppression system on at least one side of the inoperable assembly are OPERABLE, or 2) establish a continuous fire watch patrol on one side of the penetration, or 3) secure the inoperable sealing device* in the closed position, and establish an hourly fire watch, or (4) for fire dampers and normally locked fire doors, secure the inoperable sealing device in the closed position.
- b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.10.1 At least once per 18 months the above required fire rated assemblies and penetration sealing devices shall be verified OPERABLE by:

- a. Performing a visual inspection of all accessible surfaces, of each fire rated assembly, for open penetrations.
- b. Performing a visual inspection of each fire damper and its associated hardware.
- c. Performing a Functional Test, requiring closure testing of 10% of the fire dampers.**

*Except fire doors on Turbine Driven Auxiliary Feedwater Pump and Hallway enclosures which must remain open due to HELB considerations.

**This testing is in addition to the testing required by Specifications 4.7.9.3.c.1 and 4.7.9.4.b.1.

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PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS Con't

- d. Performing a visual inspection of at least 10 percent of each type of penetration seal (cable, around conduit, cable tray, piping, and ventilation duct work penetration seals; and cable tray and conduit enclosures required for Appendix R compliance). If apparent changes in appearance or abnormal degradations are found that could indicate a plant wide trend, a visual inspection of an additional 10 percent of each type of penetration seal shall be made. This inspection process shall continue until a 10 percent sample with no apparent changes in appearance or abnormal degradation is found.

4.7.10.2 Each of the required fire doors shall be verified OPERABLE by:

- a. Inspecting the hold-open, release, and closing mechanism and latches at least once per 6 months.
- b. Verifying the position of each closed fire door at least once per 24 hours.
- c. Verifying that doors with hold-open and release mechanisms are free of obstructions at least once per 24 hours.
- d. Verifying the position of each locked closed fire door at least once per 7 days.

4.7.10.3 Following repairs or maintenance on an above required fire rated assembly or sealing device, the fire rated assembly or sealing device shall be verified to be operable before exiting the applicable action statement.



PLANT SYSTEMS

BASES

The service life of a snubber is evaluated via manufacturer's input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc...). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

The number of snubbers to be functionally tested during each surveillance is based on calculations performed to allow extension of the surveillance interval from 18 months to 24 months, and therefore, the number of snubbers functionally tested deviates from the number required by the Westinghouse Standard Technical Specifications (NUREG-0452, Revision 4).

3/4.7.8 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

3/4.7.9 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression systems consists of the water system, spray and/or sprinklers, CO₂, Halon, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that one or more CO₂ Suppression System requiring automatic actuation must be isolated for personal protection to permit entry for routine tours, maintenance, construction, or surveillance testing in the protected area, the fire detection system(s) required to be operable by Specification 3.3.3.7 shall be verified to be operable. Isolation of an automatic CO₂ suppression system temporarily puts this system in a manual actuation mode. Reliance on the fire detection system, in conjunction with the ability to manually discharge the CO₂ suppression system will provide adequate fire protection for periods when personnel are required to work in these areas.

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BASES

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In the event that portions of the fire protection systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression. Backup fire protection equipment will normally take the form of permanently mounted fire extinguishers and/or fire hose stations in or near the area, or fire hoses routed to the affected area. However, it is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire suppression system to OPERABLE status within a reasonable period.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon and CO2 in the storage tanks by verifying either the weight, level, or pressure of the tanks.

In the event the fire suppression water becomes inoperable, corrective measures must be taken since this system provides the major fire suppression capability of the plant. The corrective measures, including verification of fire detection operability, or roving fire watches, or alternate/backup suppression equipment, or systems, shall provide adequate fire suppression capability for the continued protection of the nuclear plant.

The purpose of the charcoal filter fire suppression Technical Specification is to account for detection and suppression of fires in the charcoal filters. Manual operation of these systems is allowed because two-point heat detection with control room and local annunciation of trouble conditions is provided for the charcoal filters. The OPERABILITY of the fire suppression system protecting the charcoal filters is only required when there is charcoal in the filters and the filters are required to be operable. Actuation of spray water onto the charcoal filters requires both the manual opening of the system isolation valve and reaching the high temperature alarm setpoint for the automatic opening of the system deluge valve.

Because of the inaccessibility of the lower containment to personnel during operation due to ALARA radiation exposure concerns, the use of one or more CCTVs in the lower containment to monitor for fire and smoke is an acceptable substitute to an hourly fire watch, if the fire suppression system becomes inoperable.

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All hourly fire watch patrols are performed at intervals of sixty minutes with a margin of fifteen minutes.

A continuous fire watch requires that a trained individual be in the specified area at all times and that each fire zone within the specified area be patrolled at least once every fifteen minutes with a margin of five minutes.

A control valve is defined as a valve that when closed does not leave an alternate open flow path to a system. A sectionalizing valve is defined as a valve that when closed does not prevent an alternate open flow path to a system and hence does not make the fire suppression water system inoperable. Under certain situations, the closure of a sectionalizing valve followed by the closure of a second valve will not leave an open flow path to one of the specified systems. In this instance, Action Statement b of Specification 3.7.9.1 is applicable.

Manual actuation of CO2 fire suppression systems provides adequate fire protection for the protected areas based on operable fire detection in the area, low combustible loadings, and prompt fire brigade response to alarms.

Many of the action statements take credit for operable fire detection in lieu of a fire watch when a fire protection system is inoperable. Operable fire detection provides sufficient early warning capability of a fire to the appropriate Control Room.

3/4.7.10 FIRE RATED ASSEMBLIES

The OPERABILITY of the fire barriers and barrier penetrations ensure that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to detection and extinguishment. The fire barriers and fire barrier penetrations for sealing devices are periodically inspected to verify their OPERABILITY. The functional testing of the fire dampers is provided to ensure that the dampers remain functional. The ventilation seals area seals around ventilation duct work penetrating fire barriers. It is not our intent to rely on backup systems or other compensatory measures for an extended period of time and action will be taken to restore the inoperable portions of the fire rated assembly to OPERABLE status within a reasonable period.

For the purpose of determining OPERABILITY, an OPERABLE fire rated assembly and/or sealing device is one that is capable of performing its intended safety function.



ADMINISTRATIVE CONTROLS

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference Specifications:

- a. ECCS Actuation, Specifications 3.5.2 and 3.5.3.
- b. Inoperable Seismic Monitoring Instrumentation, Unit No. 1, Specification 3.3.3.3.
- c. ~~Inoperable Meteorological Monitoring Instrumentation, Unit No. 1, Specification 3.3.3.4.~~
- d. Deleted
- e. Deleted
- f. Seismic Event Analysis, Specification 4.3.3.3.2.
- g. Sealed Source Leakage in excess of limits, Specification 4.7.9.1.3.

