

Amendment 2.C(4)
No. 31, 194

Administrative controls for fire protection as described in the licensee's submittals dated January 31, 1977 and October 27, 1977 shall be implemented and maintained.

(5) Spent Fuel Pool Storage

Amendment
No. 118, 136, 169

The licensee is authorized to store D. C. Cook, Unit 1 and Unit 2 fuel assemblies, new or irradiated up to a total of 3613 fuel assemblies in the shared spent fuel pool at the Donald C. Cook Nuclear Plant subject to the following conditions:

Fuel stored in the spent fuel pool shall not have a nominal enrichment greater than 4.95% Uranium-235.

(6) Deleted by Amendment 80.

Amendment
No. 169

(7) The provisions of Specification 3/4.9.7 are not applicable for loads being moved over the pool for the duration of the spent fuel pool reracking project. Control of loads moving over the spent fuel pool during the spent fuel pool reracking project shall comply with the criteria of NUREG-0612 "Controls of Heavy Loads at Nuclear Power Plants." Administrative controls shall be in place to prevent any load not rigged in compliance with the criteria of NUREG-0612 from passing over the spent fuel pool with the crane interlocks, required by T/S 3/4.9.7, disengaged.

2.D Physical Protection

Amendment
No. 122

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Donald C. Cook Nuclear Plant Security Plan," with revisions submitted through July 21, 1988; "Donald C. Cook Nuclear Plant Training and Qualification Plan," with revisions submitted through December 18, 1986; and "Donald C. Cook Nuclear Plant Safeguards Contingency Plan," with revisions submitted through June 10, 1988. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

Indiana Michigan Power Company shall implement and maintain, in effect, all provisions of the approved Fire Protection Program as described in the Updated Safety Analysis Report for the facility and as approved in the SER dated June 4, 1979, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

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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 protected by the fire detection system(s) is required to be OPERABLE.

ACTION:

When the number of OPERABLE fire detectors is less than the minimum number of required OPERABLE detectors given below:

- a. When any, but not more than one-half the total or no two adjacent* in any fire detection zone, Function A detector(s) located outside of containment shown in Table 3.3-10 are inoperable:
1) restore the inoperable detector(s) to OPERABLE status within 14 days, 2) after the 14 day time limit expires, within the next 1 hour establish an hourly fire watch patrol to inspect the zone(s) with the inoperable detector(s).
- b. For inoperable detectors located outside containment, within 1 hour establish an hourly fire watch patrol to inspect the zone(s) when:
1) more than one-half of the Function A fire detectors in any fire detection zone shown in Table 3.3.10 are inoperable, or 2) any Function B fire detectors shown in Table 3.3.10 are inoperable, or 3) any two or more adjacent fire detectors* shown in Table 3.3.10 are inoperable.
- c. For detector(s) located inside containment: 1) establish a fire watch patrol to inspect the containment zone at least once per 8 hours, or 2) monitor the containment air temperature at least once per hour at the locations listed in Specification 4.6.1.5.
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*Adjacent fire detectors is defined as any detectors physically adjacent in the fire detection zone.

INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.3.3.7 The fire detection system for each fire detection zone shown in Table 3.3-10 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 system 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 3.3-10
Unit 1 and Common Area Fire Detection Systems

Detector System Location	Total Number of Detectors		
	Heat (= / y) *	Flame (= / y) *	Smoke (= / y) *
Auxiliary Building			
a) Elevation 573			23/0C
b) Elevation 587			55/0C
c) Elevation 609			41/0C
d) Elevation 633			41/0C
e) Elevation 650			34/0C
f) New Fuel STGE Area			4/0C
g) RF Access Control & Chem Labs			25/0
U1 East Main Steam Valve Enclosure			28/0**
U1 Main Steam Line Area			
El. 612 (Around Containment)			13/0***
U1 NESW Valve Area			
El. 612			2/0
U1 4KV Switchgear (AB)		0/3	0/2
U1 4KV Switchgear (CD)		0/3	0/2
U1 Engr. Safety System			
Switchgear & XFR. Rm.		0/5	0/9
U1 CRD, XFR. & Switchgear Rm.			
Inverter & Battery Rm.		0/5	0/8.
U1 Pressurizer Bypass XFR. Rm.			12/0
U1 Diesel Fuel Oil Transfer Pump Rm.	0/1		
U1 Diesel Generator Rm. 1AB	0/2		
U1 Diesel Generator Rm. 1CD	0/2		
U1 Diesel Generator Pump Comp.			4/0
U1&2 ASWP Vestibule			2/0C
U1 Control Room			45/0
U1 Switchgear Cable Vault		0/10***	0/13
U1 Control Room Cable Vault			0/55****
U1 Aux. Cable Vault			0/5
U1&2 ESF Basement Area			4/0C
U1 ESF Pump & MCC Rm.			9/0

C System protects area common to both Units 1 and 2

*(x/y) x is number of Function 1 (early warning fire detection and notification only) instruments.

y is number of Function 3 (actuation of fire suppression systems and early warning and notification) instruments.

*** circuit contains both smoke and flame detectors

**** two circuits of five detectors each

***** two circuits of 12 and 13 detectors each

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TABLE 3.3-10 (Continued)

Unit 1 and Common Area Fire Detection Systems

Detector System Location	Total Number of Detectors		
	Heat (x/y)*	Flame (x/y)*	Smoke (x/y)*
UL Cable Tunnels			
a) Quad 1 Cable Tunnel		0/3	0/4
b) Quad 2 Cable Tunnel		0/4	0/7
c) Quad 3N		0/3	0/4
d) Quad 3S		0/3	0/3
e) Quad 3M		0/3	0/4
f) Quad 4		0/5	0/6
UL Charcoal Filter Ventilation Units			
a) 1-HV-AES-1	0/1*****		
b) 1-HV-AES-2	0/1*****		
c) 1-HV-ACRF	0/1*****		
d) 1-HV-CIPX	0/1*****		
e) 1-HV-CPR	0/1*****		
f) 12-HV-AFX	0/1*****C		
UL Containment*****			
a) RCP 1	1/0		
b) RCP 2	1/0		
c) RCP 3	1/0		
d) RCP 4	1/0		
e) Cable Trays	58/0*****		

C System protects area common to both Units 1 and 2

*(x/y) x is number of Function A (early warning fire detection and notification only) instruments.
y is number of Function B (actuation of fire suppression systems and early warning and notification) instruments.

***** Originally installed to automatically deluge charcoal filters. However, manual actions are now necessary.

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

***** Thermistors are located within cable trays which contain combustible cables, in both upper and lower containment throughout quadrants 1-4.

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 considered to be OPERABLE with:

- a. Three fire suppression system pumps, * each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header,
- b. Two fire water tanks, * each with a minimum usable volume of 565,000 gallons (34.0 feet level indication).
- c. An OPERABLE flow path capable of taking suction from either one of the fire water tanks and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves, to the hose station valve(s) and water suppression system controlling valve(s). The hose station valve(s) and the water suppression system controlling valve(s) that are required to be in the flow path are given in Specifications 3.7.9.5 and 3.7.9.2, respectively.

APPLICABILITY: At all times.

ACTION:

- a. With one pump inoperable, restore the inoperable pump to OPERABLE status within 7 days or provide an alternate backup pump.
- b. With one fire water tank inoperable, restore the inoperable tank to OPERABLE status within 30 days or establish a backup water system supply.
- c. 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.
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

* These pumps and tanks are shared between Units 1 and 2.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the water supply contained in the fire water tanks.
- b. 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.
- c. At least once per 31 days by verifying that each valve (manual, power operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- d. At least once per 6 months by performance of a system flush of above ground internal distribution headers and fire hydrants.
- e. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- f. 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 automatic valve in the flow path actuates to its correct position,
 2. Verifying that each pump develops a flow of at least 2500 gpm at a system head of at least 300 feet of water by observing three points (minimum, rated, and peak) on the pump's performance curve,
 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 pump starts in its preplanned sequence to maintain the fire suppression water system pressure greater than or equal to 100 psig.
- g. 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 obstruction by a full flow test.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.1.2 The fire pump diesel engines shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying:
 1. The fuel storage tanks contain at least 160 gallons of fuel, and
 2. The diesels start from ambient conditions and operate for at least 30 minutes.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tanks 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 diesels to an inspection in accordance with procedures prepared in conjunction with the manufacturer's recommendations for this class of standby service.

4.7.9.1.3 The fire pump diesel starting battery banks and chargers 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 4.3.3.7, 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 and establish an hourly fire watch patrol, 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 a continuous fire watch. For high radiation areas where closed circuit television coverage does not exist, an hourly fire watch patrol will be instituted.

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.e.
- 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 fire protection water flow surveillance testing may be suspended until the completion of the fire protection water storage tank and fire pump installations (May 31, 1993). The surveillance testing suspended as a result of this amendment will be initiated at its normal frequency within four months of the new fire protection water storage tanks and fire pumps being declared OPERABLE, with the exception of unit outage required testing which would be completed before the end of the next scheduled unit outage.

TABLE 3.7-5 A

OPEN HEAD DELUGE WATER SPRAY SYSTEMSLOCATIONACTUATION

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 3.7-5.3

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 above 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 system 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 SYSTEMS17-TON CAPACITY

<u>LOCATION</u>	<u>ACTUATION PERIOD</u>
Diesel Generator LAB Room	Cross-zoned Heat
Diesel Generator LCD Room	Cross-zoned Heat
Diesel Generator Fuel Oil Pump Room	Heat
4 KV 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.

PLANT SYSTEMS

HALON SYSTEMS

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.

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.

The fire protection water flow surveillance testing may be suspended until the completion of the fire protection water storage tank and fire pump installations (May 31, 1993). The surveillance testing suspended as a result of this amendment will be initiated at its normal frequency within four months of the new fire protection water storage tanks and fire pumps being declared OPERABLE, with the exception of unit outage required testing which would be completed before the end of the next scheduled unit outage.

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

**Within the Controlled Area

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 safe shutdown 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 duct work) 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 and establish an hourly fire watch patrol, 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 patrol, or 4) for fire dampers and normally locked fire doors, secure the inoperable sealing device in the closed position.***
- b. The provisions of Specifications 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 casting 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 casting is in addition to the casting required by Specifications 4.7.9.3.c.1 and 4.7.9.4.b.1.

*** Option (4) should be used for fire dampers only after the appropriate HVAC and radiological reviews have been performed.



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.



ADMINISTRATIVE CONTROLS

- b. At least one licensed Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in Mode 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room.
- c. An individual* qualified in radiation protection procedures shall be on site when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be directly supervised by a licensed Senior Operator trained or qualified in refueling and CORE ALTERATIONS (SO-CA) who has no other concurrent responsibilities during this operation.

e. ~~A fire brigade of at least 5 members* shall be maintained on-site at all times. The fire brigade shall not include 3 members of the minimum shift crew necessary for safe shutdown of the unit or any personnel required for other essential functions during a fire emergency.~~



The amount of overtime worked by plant staff members performing safety-related functions must be limited in accordance with NRC Policy Statement on working hours (Generic Letter 82-12).



The Shift Supervisor, Assistant Shift Supervisor, and Unit Supervisor shall hold a Senior Operator License.



The Operations Superintendent must hold or have held a Senior Operator License at Cook Nuclear Plant or a similar reactor and one mid-level Operations Production Supervisor shall hold a current Senior Operator License.

The unexpected absence, for a period of time not to exceed 2 hours, of the on-site individual qualified in radiation protection procedures is permitted provided immediate action is taken to fill the required position.

*The individual qualified in radiation protection procedures and the composition of the fire brigade may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.

ADMINISTRATIVE CONTROLS

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978.
- b. Deleted.
- c. Deleted.
- d. PROCESS CONTROL PROGRAM implementation.
- e. OFFSITE DOSE CALCULATION MANUAL implementation.
- f. Quality Assurance Program for effluent and environmental monitoring using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974, and Regulatory Guide 4.1, Rev. 1, April 1975.

6.8.2 Each procedure and administrative policy of Specification 6.8.1 above, and changes thereto, including temporary changes, shall be reviewed prior to implementation as set forth in Specification 6.5 above.

6.8.3 A plant program for post-accident sampling shall be established, implemented, and maintained which will ensure the capability to obtain and analyze reactor coolant samples, containment atmosphere noble gas samples, and unit vent gaseous effluent samples for iodines and particulates under accident conditions. The program will include the following:

- a. Training of personnel.
- b. Procedures for sampling and analysis.
- c. Provisions for maintenance of sampling and analysis equipment.

g. Fire Protection Program implementation

INSTRUMENTATION

BASES

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.3.5.1 APPENDIX R REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the Appendix R remote shutdown instrumentation ensures that sufficient instrumentation is available to permit shutdown of the facility to COLD SHUTDOWN conditions at the local shutdown indication (LSI) panel. In the event of a fire, normal power to the LSI panels may be lost. As a result, capability to repair the LSI panels from Unit 2 has been provided. If the alternate power supply is not available, fire watches will be established in those fire areas where loss of normal power to the LSI panels could occur in the event of fire. This will consist of either establishing continuous fire watches or verifying OPERABILITY of fire detectors per Specification 4.3.3.7 and establishing hourly fire watches. The details of how these fire watches are to be implemented are included in a plant procedure.

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 systems is inoperable, the ACTION statements provided 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.

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.

BASES (Continued)

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. The method for determining the next interval for the visual inspection of snubbers is provided based upon the number of unacceptable snubbers found during the previous inspection, the category size for each snubber type, and the previous inspection interval per NRC Generic Letter 90-09. A snubber is considered unacceptable if it fails to satisfy the acceptance criteria of the visual inspection. Any inspection whose results required a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 24 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

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).

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Review Committee. The determination shall be based upon the existing

~~BASES~~ (Continued)

MOVE

B 3/4 7-6 →

radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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 system 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 suppression 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.

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BASES

3/4.7.9 (Continued)

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met. While performing the surveillances specified in 4.7.9.1 the fire suppression water system is still capable of performing its intended function. Consequently, it is not necessary to enter the ACTION STATEMENT specified in 3.7.9.1 while the SURVEILLANCES specified in 4.7.9.1.1 are being performed, unless the tested equipment fails the SURVEILLANCE. In addition, an allowance is made for ensuring a sufficient volume of Halon and CO₂ in the Halon and CO₂ storage tanks by verifying either the weight, level, or pressure of the tanks.

The fire suppression water system has three fire pumps common to both units which discharge into underground ring headers. There is one motor-driven horizontal centrifugal fire pump rated at 2500 gpm that takes suction from the fire water storage tanks; and two diesel-engine-driven horizontal centrifugal fire pumps rated at 2500 gpm that take suction from the fire water storage tanks. Having a combination of diesel-driven and electric motor-driven pumps in the system design is consistent with NRC Branch Technical Position APSCS 9.5-1.

The purpose of the charcoal filter fire suppression T/S 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. 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.

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BASES

3/4.7.9 (Continued)

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 c 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.

During Surveillance Testing of a Low Pressure CO₂ System with the system inoperable, the requirement for a continuous fire watch may be suspended during portions of the test which result or may result in a discharge into the CO₂ protected area. Similarly, if a CO₂ actuation occurs which results in the need to have the Low Pressure CO₂ System made inoperable, the requirement for a continuous fire watch may be suspended. In either case, the area affected shall be restored to habitability as soon as practicable, after which the continuous fire watch is to be re-established if the system is still inoperable.

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 penetration 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.

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(l) Deleted by Amendment 63.

(m) Deleted by Amendment 19.

(n) Deleted by Amendment 28.

Amendment
No. 12, 180

(o)

Administrative controls for fire protection as described in the licensee's submittals dated January 31, 1977 and October 27, 1977 shall be implemented and maintained.

Amendment
No. 64, 121

(p) Deleted by Amendment

Indiana Michigan Power Company shall implement and maintain, in effect, all provisions of the approved Fire Protection Program as described in the Updated Safety Analysis Report for the facility and as approved in the SER dated June 4, 1979, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

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INSTRUMENTATION

FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be OPERABLE.

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

ACTION:

When the number of OPERABLE fire detectors is less than the minimum number of required OPERABLE detectors given below:

- a. When any, but not more than one-half the total or no two adjacent* in any fire detection zone, Function A detector(s) located outside of containment shown in Table 3.3-11 are inoperable:
1) restore the inoperable detector(s) to OPERABLE status within 14 days, 2) after the 14 day time limit expires, within the next 1 hour establish an hourly fire watch patrol to inspect the zone(s) with the inoperable detector(s).
- b. For inoperable detectors located outside containment, within 1 hour establish an hourly fire watch patrol to inspect the zone(s) when:
1) more than one-half of the Function A fire detectors in any fire detection zone shown in Table 3.3.11 are inoperable, or 2) any Function B fire detectors shown in Table 3.3.11 are inoperable, or 3) any two or more adjacent fire detectors* shown in Table 3.3.11 are inoperable.
- c. For detector(s) located inside containment: 1) establish a fire watch patrol to inspect the containment zone at least once per 8 hours, or 2) monitor the containment air temperature at least once per hour at the locations listed in Specification 4.6.1.5.
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

*Adjacent fire detectors is defined as any detectors physically adjacent in the fire detection zone.

INSTRUMENTATION

SURVEILLANCE REQUIREMENTS

4.3.3.8 The fire detection system for each fire detection zone shown in Table 3.3-11 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 Intentionally Deleted TABLE 3.3-11

Unit 2 and Common Area Fire Detection Systems

Detection System Location	Total Number of Detectors		
	Heat (x/y)*	Flame (x/y)*	Smoke (x/y)*
Auxiliary Building			
a) Elevation 573			23/0 C
b) Elevation 587			55/0 C
c) Elevation 609			41/0 C
d) Elevation 633			41/0 C
e) Elevation 650			34/0 C
f) New Fuel STGE Area			4/0 C
U2 East Main Steam Valve Enclosure			28/0**
U2 Main Steam Line Area			
El. 612 (Around Containment)			13/0**
U2 NESW Valve Area			
El. 612			2/0
U2 4KV Switchgear (AB)		0/3	0/2
U2 4KV Switchgear (CD)		0/3	0/2
U2 Engr. Safety System			
Switchgear & XFMR. Rm.		0/5	0/14
U2 CRD, XFMR & Switchgear Rm.			
Inverter & AB Battery Rms.		0/5	0/17
U2 Pressurizer Heater XFMR. Rm.			12/0
U2 Diesel Fuel Oil Transfer Pump Rm.	0/1		
U2 Diesel Generator Rm. 2AB	0/2		
U2 Diesel Generator Rm. 2CD	0/2		
U2 Diesel Generator Ramp Corr.			4/0
U1&2 AFWP Vestibule			2/0 C
U2 Control Room			42/0
U2 Switchgear Cable Vault		0/10***	0/13
U2 Control Rm. Cable Vault			0/76****
U2 Aux. Cable Vault			0/6
U1&2 ESW Basement Area			4/0 C
U2 ESW Pump & MCC Rms.			9/0

C System protects area common to both Units 1 and 2

*(x/y) x is number of Function A (early warning fire detection and notification only) instruments.

y is number of Function B (actuation of fire suppression systems and early warning and notification) instruments.

** circuit contains both smoke and flame detectors

*** two circuits of five detectors each

**** two circuits of 38 detectors each

Table Intentionally Deleted TABLE 3.3-11 (Continued)

Unit 2 and Common Area Fire Detection Systems

Detection System Location	Total Number of Detectors		
	Hear (x/y)*	Flame (x/y)*	Smoke (x/y)*
U2 Cable Tunnels			
a) Quad 1 Cable Tunnel		0/3	0/4
b) Quad 2 Cable Tunnel		0/4	0/7
c) Quad 3N		0/3	0/3
d) Quad 3S		0/3	0/4
e) Quad 3M		0/3	0/4
f) Quad 4		0/5	0/6
U2 Charcoal Filter Ventilation Units			
a) 2-HV-AES-1	0/1*****		
b) 2-HV-AES-2	0/1*****		
c) 2-HV-ACRF	0/1*****		
d) 2-HV-CIPX	0/1*****		
e) 2-HV-CFR	0/1*****		
f) 12-HV-AFX	0/1*****C		
U2 Containment*****			
a) RCP 1	1/0		
b) RCP 2	1/0		
c) RCP 3	1/0		
d) RCP 4	1/0		
e) Cable Trays	64/0*****		
C	System protects area common to both Units 1 and 2		
*(x/y)	x is number of Function A (early warning fire detection and notification only) instruments.		
	y is number of Function B (actuation of fire suppression systems and early warning and notification) instruments.		
*****	Originally installed to automatically deluge charcoal filters. However, manual actions are now necessary.		
*****	The fire detection instruments located within the Containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate tests.		
*****	Thermistors are located within all cable trays which contain combustible cables, in both both upper and lower containment throughout quadrants 1-4.		

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 considered to be OPERABLE with:

- a. Three fire suppression system pumps, * each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header,
- b. Two fire water tanks, * each with a minimum usable volume of 365,000 gallons (34.0 feet level indication)
- c. An OPERABLE flow path capable of taking suction from either one of the fire water tanks and transferring the water through distribution piping (with OPERABLE sectionalizing valves) up to the yard hydrant curb control valves, to the hose station valve(s) and water suppression system controlling valve(s). The hose station valve(s) and the water suppression system controlling valve(s) that are required to be in the flow path are given in Specifications 3.7.9.5 and 3.7.9.2, respectively.

APPLICABILITY: At all times.

ACTION:

- a. With one pump inoperable, restore the inoperable pump to OPERABLE status within 7 days or provide an alternate backup pump.
- b. With one fire water tank inoperable, restore the inoperable tank to OPERABLE status within 30 days or establish a backup water system supply.
- c. 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.
- d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

* These pumps and tanks are shared between Units 1 and 2

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the water supply contained in the fire water tanks.
- b. 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.
- c. At least once per 31 days by verifying that each valve (manual, power operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- d. At least once per 6 months by performance of a system flush of above ground internal distribution headers and fire hydrants.
- e. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- f. 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 automatic valve in the flow path actuates to its correct position,
 2. Verifying that each pump develops a flow of at least 2500 gpm at a system head of at least 300 feet of water by observing three points (minimum, rated and peak) on the pump's performance curve,
 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.
- g. 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.



PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.9.1.2 The fire pump diesel engines shall be demonstrated OPERABLE.

- a. At least once per 31 days by verifying:
 1. The fuel storage tanks contain at least 160 gallons of fuel, and
 2. The diesels start from ambient conditions and operate for at least 30 minutes.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tanks 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 diesels 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 banks and chargers 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 Table 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 4.3.3.8 or pneumatic per Table 3.7-5B), for the affected area is OPERABLE and establish an hourly fire watch patrol, 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 a continuous fire watch. For high radiation areas where closed circuit television coverage does not exist, an hourly fire watch patrol will be instituted.

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.a.
- 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 Technical Specification 4.0.8 are applicable.

*The fire protection water flow surveillance testing may be suspended until the completion of the fire protection water storage tank and fire pump installations (May 31, 1993). The surveillance testing suspended as a result of this amendment will be initiated at its normal frequency within four months of the new fire protection water storage tanks and fire pumps being declared OPERABLE with the exception of unit outage required testing which would be completed before the end of the next scheduled unit outage.

TABLE 3.7-5 A

OPEN HEAD DELUGE WATER SPRAY SYSTEMS

LOCATION

ACTUATION

2-HV-AES-1 Charcoal Filters

Manual - Electric - Heat

2-HV-AES-2 Charcoal Filters

Manual - Electric - Heat

2-HV-ACRF-1 Charcoal Filters

Manual - Electric - Heat

2-HV-CPR-1 Charcoal Filters

Manual - Electric - Heat

2-HV-CIPX Charcoal Filters

Manual - Electric - Heat

12-HV-AFX Charcoal Filters*

Manual - Electric - Heat

*Shared system with Unit 1.



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.

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.
- b. 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".

TABLE 3.7-6

LOW PRESSURE CARBON DIOXIDE SYSTEMS17 TON CAPACITY

<u>LOCATION</u>	<u>ACTUATION PERIOD</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.

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.

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.*

*The fire protection water flow surveillance testing may be suspended until the completion of the fire protection water storage tank and fire pump installations (May 31, 1993). The surveillance testing suspended as a result of this amendment will be initiated at its normal frequency within four months of the new fire protection water storage tanks and fire pumps being declared OPERABLE, with the exception of unit outage required testing which would be completed before the end of the next scheduled unit outage.



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

PLANT SYSTEMS

3X4.7.10 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 safe shutdown/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 duct work) 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 and establish an hourly fire watch patrol, 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 patrol, 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.

***Option (4) should be used for fire dampers only after the appropriate HVAC and radiological reviews have been performed.

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.

ADMINISTRATIVE CONTROLS

- b. At least one licensed Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in Mode 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room.
- c. An individual* qualified in radiation protection procedures shall be on site when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be directly supervised by a licensed Senior Operator trained or qualified in refueling and CORE ALTERATIONS (SO-CA) who has no other concurrent responsibilities during this operation.

~~e. A site fire brigade of at least 5 members* shall be maintained onsite at all times. The fire brigade shall not include 3 members of the minimum shift crew necessary for safe shutdown of the unit or any personnel required for other essential functions during a fire emergency.~~

e



The amount of overtime worked by plant staff members performing safety-related functions must be limited in accordance with NRC Policy Statement on working hours (Generic Letter 82-12).

f



The Shift Supervisor, Assistant Shift Supervisor, and Unit Supervisor shall hold a Senior Operator License.

g



The Operations Superintendent must hold or have held a Senior Operator License at Cook Nuclear Plant or a similar reactor and one mid-level Operations Production Supervisor shall hold a current Senior Operator License.

The unexpected absence, for a period of time not to exceed 2 hours, of the on-site individual qualified in radiation protection procedures is permitted provided immediate action is taken to fill the required position.

~~*The individual qualified in radiation protection procedures and the composition of the fire brigade may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.~~

ADMINISTRATIVE CONTROLS

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978.
- b. Deleted.
- c. Deleted.
- d. PROCESS CONTROL PROGRAM implementation.
- e. OFFSITE DOSE CALCULATION MANUAL implementation.
- f. Quality Assurance Program for effluent and environmental monitoring using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974, and Regulatory Guide 4.1, Rev. 1, April 1975.

6.8.2 Each procedure and administrative policy of Specification 6.8.1 above, and changes thereto, including temporary changes, shall be reviewed prior to implementation as set forth in Specification 6.5 above.

6.8.3 A plant program for post-accident sampling shall be established, implemented, and maintained which will ensure the capability to obtain and analyze reactor coolant samples, containment atmosphere noble gas samples, and unit vent gaseous effluent samples for iodines and particulates under accident conditions. The program will include the following:

- a. Training of personnel,
- b. Procedures for sampling and analysis,
- c. Provisions for maintenance of sampling and analysis equipment.

9. Fire Protection Program implementation



INSTRUMENTATION

BASES

3/4.3.3.6 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.

3/4.3.3.7 Deleted:

3/4.3.3.8 FIRE DETECTION INSTRUMENTATION

OPERABILITY of the fire detection instrumentation ensures that adequate warning 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 fires will reduce the potential for damage to safety-related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY. Use of containment temperature monitoring is allowed once per hour if containment fire detection is inoperable.

3/4.3.3.9 EXPLOSIVE GAS MONITORING INSTRUMENTATION

This instrumentation 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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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).

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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 system 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 systems 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.

PLANT SYSTEMS

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3/4.7.9 (Continued)

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the effected 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. While performing the surveillances specified in 4.7.9.1.1 the fire suppression water system is still capable of performing its intended function. Consequently, it is not necessary to enter the ACTION STATEMENT specified in 3.7.9.1 while the SURVEILLANCES specified in 4.7.9.1.1 are being performed, unless the tested equipment fails the SURVEILLANCE. In addition, an allowance is made for ensuring a sufficient volume of Halon and CO₂ in the Halon and CO₂ storage tanks by verifying either the weight, level, or pressure of the tanks.

The fire suppression water system has three fire pumps common to both units which discharge into underground ring headers. There is one motor-driven horizontal centrifugal fire pump rated at 2500 gpm that takes suction from the fire water storage tanks; and two diesel-engine-driven horizontal centrifugal fire pumps rated at 2500 gpm that take suction from the fire water storage tanks. Having a combination of diesel-driven and electric-motor-driven pumps in the system design is consistent with NRC Branch Technical Position APSCS 9.5-1.

BASES

3/4.7.9 (Continued)

The purpose of the charcoal filter fire suppression T/S 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. 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 a continuous 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 c 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.

BASES

3/4.7.9 (Continued)

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.

During Surveillance Testing of a Low Pressure CO₂ System with the system inoperable, the requirement for a continuous fire watch may be suspended during portions of the test which result or may result in a discharge into the CO₂ protected area. Similarly, if a CO₂ actuation occurs which results in the need to have the Low Pressure CO₂ System made inoperable, the requirement for a continuous fire watch may be suspended. In either case, the area affected shall be restored to habitability as soon as practicable, after which the continuous fire watch is to be re-established if the system is still inoperable.

3/4.7.10 FIRE RATED ASSEMBLIES

The OPERABILITY of the fire barriers and barrier penetrations ensures 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 penetration 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 are 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/sealing device is one that is capable of performing its intended safety function.



ATTACHMENT 3 TO AEP:NRG:0692CX

REVISED LICENSES AND THE T/S PAGES, AND APPLICABLE
JULY 1994 UPDATED FINAL SAFETY ANALYSIS REPORT PAGES

Amendment 2.C(4) Indiana Michigan Power Company shall implement and maintain, in
Nos. 31, 194 effect, all provisions of the approved Fire Protection Program as
described in the Updated Safety Analysis Report for the facility
and as approved in the SER dated June 4, 1979, subject to the
following provision:

The licensee may make changes to the approved fire protection
program without prior approval of the Commission only if
those changes would not adversely affect the ability to
achieve and maintain safe shutdown in the event of a fire.

(5) Spent Fuel Pool Storage

Amendment The licensee is authorized to store D. C. Cook, Unit 1 and Unit 2
No. 118,136,169 fuel assemblies, new or irradiated up to a total of 3613 fuel
assemblies in the shared spent fuel pool at the Donald C. Cook
Nuclear Plant subject to the following conditions:

Fuel stored in the spent fuel pool shall not have a nominal
enrichment greater than 4.95% Uranium-235.

(6) Deleted by Amendment 80.

Amendment (7) The provisions of Specification 3/4.9.7 are not applicable for
No. 169 loads being moved over the pool for the duration of the spent
fuel pool reracking project. Control of loads moving over the
spent fuel pool during the spent fuel pool reracking project
shall comply with the criteria of NUREG-0612 "Controls of Heavy
Loads at Nuclear Power Plants." Administrative controls shall be
in place to prevent any load not rigged in compliance with the
criteria of NUREG-0612 from passing over the spent fuel pool with
the crane interlocks, required by T/S 3/4.9.7, disengaged.

*2.D Physical Protection

Amendment The licensee shall fully implement and maintain in effect all
No. 122 provisions of the Commission-approved physical security, guard
training and qualification, and safeguards contingency plans
including amendments made pursuant to provisions of the
Miscellaneous Amendments and Search Requirements revisions to 10
CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR
50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards
Information protected under 10 CFR 73.21, are entitled: "Donald
C. Cook Nuclear Plant Security Plan," with revisions submitted
through July 21, 1988; "Donald C. Cook Nuclear Plant Training and
Qualification Plan," with revisions submitted through December
18, 1986; and "Donald C. Cook Nuclear Plant Safeguards
Contingency Plan," with revisions submitted through June 10,
1988. Changes made in accordance with 10 CFR 73.55 shall be
implemented in accordance with the schedule set forth therein.

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6.0 ADMINISTRATIVE CONTROLS

6.2.2 (Continued)

- b. At least one licensed Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in Mode 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room.
- c. An individual* qualified in radiation protection procedures shall be on site when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be directly supervised by a licensed Senior Operator trained or qualified in refueling and CORE ALTERATIONS (SO-CA) who has no other concurrent responsibilities during this operation.
- e. The amount of overtime worked by plant staff members performing safety-related functions must be limited in accordance with NRC Policy Statement on working hours (Generic Letter 82-12).
- f. The Shift Supervisor, Assistant Shift Supervisor, and Unit Supervisor shall hold a Senior Operator License.
- g. The Operations Superintendent must hold or have held a Senior Operator License at Cook Nuclear Plant or a similar reactor and one mid-level Operations Production Supervisor shall hold a current Senior Operator License.

* The unexected absence, for a period of time not to exceed 2 hours, of the on-site individual qualified in radiation protection procedures is permitted provided immediate action is taken to fill the required position.

6.0 ADMINISTRATIVE CONTROLS

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978.
- b. Deleted.
- c. Deleted.
- d. PROCESS CONTROL PROGRAM implementation.
- e. OFFSITE DOSE CALCULATION MANUAL implementation.
- f. Quality Assurance Program for effluent and environmental monitoring using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974, and Regulatory Guide 4.1, Rev. 1, April 1975.
- g. Fire Protection Program implementation.

6.8.2 Each procedure and administrative policy of Specification 6.8.1 above, and changes thereto, including temporary changes, shall be reviewed prior to implementation as set forth in Specification 6.5 above.

6.8.3 A plant program for post-accident sampling shall be established, implemented, and maintained which will ensure the capability to obtain and analyze reactor coolant samples, containment atmosphere noble gas samples, and unit vent gaseous effluent samples for iodines and particulates under accident conditions. The program will include the following:

- a. Training of personnel,
- b. Procedures for sampling and analysis,
- c. Provisions for maintenance of sampling and analysis equipment.

3/4 BASES
3/4.3 INSTRUMENTATION

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.3.5.1 APPENDIX R REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the Appendix R remote shutdown instrumentation ensures that sufficient instrumentation is available to permit shutdown of the facility to COLD SHUTDOWN conditions at the local shutdown indication (LSI) panel. In the event of a fire, normal power to the LSI panels may be lost. As a result, capability to repair the LSI panels from Unit 2 has been provided. If the alternate power supply is not available, fire watches will be established in those fire areas where loss of normal power to the LSI panels could occur in the event of fire. This will consist of either establishing continuous fire watches or verifying OPERABILITY of fire detectors per Specification 4.3.3.7 and establishing hourly fire watches. The details of how these fire watches are to be implemented are included in a plant procedure.

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.

3/4.7.8 HYDRAULIC SNUBBERS (Continued)

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. The method for determining the next interval for the visual inspection of snubbers is provided based upon the number of unacceptable snubbers found during the previous inspection, the category size for each snubber type, and the previous inspection interval per NRC Generic Letter 90-09. A snubber is considered unacceptable if it fails to satisfy the acceptance criteria of the visual inspection. Any inspection whose results required a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 24 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

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).

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

(l) Deleted by Amendment 63.

(m) Deleted by Amendment 19.

(n) Deleted by Amendment 28.

Amendment
No. 12, 180

(o) Indiana Michigan Power Company shall implement and maintain, in effect, all provisions of the approved Fire Protection Program as described in the Updated Safety Analysis Report for the facility and as approved in the SER dated June 4, 1979, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

Amendment
No. 64, 121,

(p) Deleted by Amendment

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6.0 ADMINISTRATIVE CONTROLS

6.2 ORGANIZATION (Continued)

FACILITY STAFF (Continued)

- b. At least one licensed Operator shall be in the control room when fuel is in the reactor. In addition, while the unit is in Mode 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room.
- c. An individual* qualified in radiation protection procedures shall be on site when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be directly supervised by a licensed Senior Operator trained or qualified in refueling and CORE ALTERATIONS (SO-CA) who has no other concurrent responsibilities during this operation.
- e. The amount of overtime worked by plant staff members performing safety-related functions must be limited in accordance with NRC Policy Statement on working hours (Generic Letter 82-12).
- f. The Shift Supervisor, Assistant Shift Supervisor, and Unit Supervisor shall hold a Senior Operator License.
- g. The Operations Superintendent must hold or have held a Senior Operator License at Cook Nuclear Plant or a similar reactor and one mid-level Operations Production Supervisor shall hold a current Senior Operator License.

* The unexpected absence, for a period of time not to exceed 2 hours, of the on-site individual qualified in radiation protection procedures is permitted provided immediate action is taken to fill the required position.

6.0 ADMINISTRATIVE CONTROLS

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978.
- b. Deleted.
- c. Deleted.
- d. PROCESS CONTROL PROGRAM implementation.
- e. OFFSITE DOSE CALCULATION MANUAL implementation.
- f. Quality Assurance Program for effluent and environmental monitoring using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974, and Regulatory Guide 4.1, Rev. 1, April 1975.
- g. Fire Protection Program implementation.

6.8.2 Each procedure and administrative policy of Specification 6.8.1 above, and changes thereto, including temporary changes, shall be reviewed prior to implementation as set forth in Specification 6.5 above.

6.8.3 A plant program for post-accident sampling shall be established, implemented, and maintained which will ensure the capability to obtain and analyze reactor coolant samples, containment atmosphere noble gas samples, and unit vent gaseous effluent samples for iodines and particulates under accident conditions. The program will include the following:

- a. Training of personnel,
- b. Procedures for sampling and analysis,
- c. Provisions for maintenance of sampling and analysis equipment.

3/4 BASES
3/4.3 INSTRUMENTATION

3/4.3.3.6 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.

3/4.3.3.7 Deleted.

3/4.3.3.9 EXPLOSIVE GAS MONITORING INSTRUMENTATION

This instrumentation 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.

3/4.7.7 HYDRAULIC SNUBBERS (Continued)

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).

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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.

The Facility Service Systems consist of the Fire Protection Systems, the Service Water System, and the Compressed Air System.

9.8.1 FIRE PROTECTION SYSTEM

Introduction

The information presented in Section 9.8-1 provides a general discussion of the various fire protection systems at Cook Nuclear Plant. In addition, references to specific documents have been provided to address different facets of the Fire Protection Program* in greater detail. These documents are:

- o Fire Hazards Analysis.
- o Safe Shutdown Capability Assessment (SSCA).
- o Fire Protection Program Manual (FPPM).

The Fire Hazards Analysis provides a zone-by-zone analysis of the fire hazards and the effects of a postulated fire at Cook Nuclear Plant in accordance with the Branch Technical Position APCSB 9.5-1.

The SSCA provides a summary and the results of the analysis of the Cook Nuclear Plant to the requirements of 10 CFR 50, Appendix R (specifically, Sections III.G and L). Analyses have been performed for the specific requirements of Appendix R, Section III.L (alternate shutdown), which confirm the capability to safely bring the reactor from full power operation to cold shutdown within 72 hours. Specific NRC SERs provide the basis for acceptance of Sections III.G, J, K, L, and O of Appendix R to 10CFR50, for which Sections III.G and III.O are contingent upon the maintenance of administrative control of transient combustibles equivalent to Sections III.K.1 through III.K.8.

*Refer to GL 88-12

The FPPM provides a description of the overall fire protection program for Cook Nuclear Plant including major responsibilities of involved organizations. The FPPM also contains information about exemptions from the requirements of Appendix R to 10CFR50, technical evaluations related to fire protection, NRC SERs, miscellaneous analysis and evaluation summaries, and a fire protection design basis table which compares plant fire protection features against BTP APCSB 9.5-1 Appendix A guidelines.

Design Bases

The fire protection system is designed to achieve the following objectives:

- a) Provide automatic fire detection in those areas where the fire danger is greatest.
- b) Provide fire extinguishment by fixed systems of the water, Halon 1301, or carbon dioxide type and actuate automatically or manually in those areas where the fire danger is greatest.
- c) Provide manually operated fire extinguishing equipment including fire hose reels capable of using water, foam, or carbon dioxide as the fire fighting agent, and portable equipment of the wheeled and hand carried type for use by personnel at all points throughout the property.
- d) The fire protection system is designed to equal or exceed the standards of the National Fire Protection Association and the American Nuclear Insurers.

System Design and Operation

The Fire Protection System is shown in Figures 9.8-1 and 9.8-2.

ATTACHMENT 4 TO AEP:NRC:0692CX

COOK NUCLEAR PLANT COST BENEFICIAL LICENSING ACTION
REMOVE UNIT 1 AND UNIT 2 FIRE PROTECTION REQUIREMENTS
FROM THE LICENSES AND TECHNICAL SPECIFICATIONS



Lifetime Cost Beneficial Licensing Action

Regulatory Requirement:

10 CFR 50, Appendix A requires fire protection measures.

Effect of Requirement:

Location of these requirements in the technical specifications require other additional resources for making T/S changes to support the Fire Protection Program and increases the potential for Licensee Events Reports.

Rationale for Regulatory Change:

Adopting the Standard Fire Protection license condition in the UFSAR would conform to GLs 86-10, 88-12, and 93-07 and would assure that changes to the Fire Protection program under the provisions of 10 CFR 50.59 would not adversely affect the ability to achieve and maintain safe shutdown.

Approximate Cost of Requirement:

It is estimated that in the next 20.5 years about thirteen amendments to the Fire Protection T/S will not need to be filed and about twenty six 10 CFR 50.59 Safety Reviews will be conducted. This results in a savings of about \$114,400. Also, it is estimated that one unnecessary Licensee Event Report per year will be avoided. At \$10,000 per LER, minus \$1,600 for each reportability review performed for 20.5 years, this results in an additional savings of approximately \$172,200. Thus the estimated total cost savings will be about \$290,000.