

- (19) IE Information Notice 79-22, Qualification of Control System
(Section 7.8.C, SER, SSER #2)

Prior to startup following the first refueling outage, MP&L shall complete any design changes found necessary as a result of this review.

- (20) Standby Service Water System (Section 9.2.1 SER, SSER #2)

(Deleted)

- (21) Spent Fuel Pool Ventilation System (Section 9.4.2 SER, SSER #2)

If spent irradiated fuel is placed in the spent fuel pool prior to installation and operability of the safety related backup fuel pool cooling pump room coolers, the plant shall be placed in shutdown condition and remain shut down with the RHR system dedicated to the fuel pool cooling mode.

- (22) Remote Shutdown Panel (Section 9.5.4.1, SER, SSER #2)

Prior to startup following the first refueling outage, MP&L shall install electrical isolation switches between the control room and the Division 1 remote shutdown panel.

- (23) Fire Protection Program (Section 9.5.9, SER)

EOI shall maintain in effect and fully implement all provisions of the approved Fire Protection Plan. In addition, EOI shall maintain the fire protection program to meet the intent of Appendix R to 10 CFR Part 50, except that an oil collection system for the reactor coolant pump is not required.

(Deleted)

- (a) Include an emergency override of the test mode of the Division 3 HPCS diesel generator to permit response to emergency signals and to return the control of the diesel generator to the emergency standby mode. (Item No. 333, TS 4.8.1.1.2.d.12.b)
- (b) Provide the second level undervoltage protection for Division 3 power supply (Item No. 373, TS Table 3.3.3-2).
- (c) Incorporate a bypass or coincident logic in all Division 1 and 2 diesel generator protective trips, except for trips on diesel engine overspeed and generator differential current (Item No. 808, TS 4.8.1.1.2.d.16.d).

(38) Control Room Leak Rate (Section 6.2.6, SSER #6)

EOI shall operate Grand Gulf Unit 1 with an allowable control room leak rate not to exceed 590 cfm. Upon restart of construction of Unit 2 control room, EOI will be permitted to operate at a leak rate of 760 cfm as evaluated in SSER No. 6.

(39) Temporary Secondary Containment Boundary Change

For a period of time not to exceed 144 cumulative hours, the provisions of Specification 3/4.6.6.1 may be applied to the railroad bay area including the exterior railroad bay door on the auxiliary building in lieu of the present secondary containment boundaries that isolate the railroad bay area. While the railroad bay area is being used as a secondary containment boundary, the railroad bay door may be opened for the purpose of moving trucks in and out provided the four hour limitation in ACTION a of Technical Specification 3.6.6.1 is reduced to one hour. A fire watch shall be established in the railroad bay area while the door is being used as a secondary containment boundary.

(40) Temporary Ultimate Heat Sink Change

With the plant in OPERATIONAL condition 4, SSW cooling tower basin A may be considered OPERABLE in accordance with Technical Specification 3.7.1.3 with less than a 30 day supply of water (without makeup) during the time that SSW basin B is drained to replace its associated service water pump provided:

- (a) SSW basin A water level is maintained greater than or equal to 87".
- (b) At least two sources of water (other than normal makeup with one source not dependent on offsite power) are available for makeup to SSW basin A.

This license condition may remain in effect until plant startup following the outage scheduled for fall 1985.

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(41) Fire Protection Program

Entergy Operations, Inc. shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in Revision 4 to the Updated Final Safety Analysis Report and as approved in the Safety Evaluation Report dated _____, subject to the following provisions:

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~~

(DELETED)

~~LIMITING CONDITION FOR OPERATION~~

3.3.7.9 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3.7.9-1 shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection instrument is required to be OPERABLE.

ACTION:

With the number of OPERABLE Function A or Function B fire detection instruments less than the Minimum Instruments OPERABLE requirement of Table 3.3.7.9-1:

- a. Within 1 hour, establish a fire watch patrol to inspect the zone(s) with the Function A or room(s) with Function B inoperable instrument(s) at least once per hour, unless the instrument(s) is located inside the containment, steam tunnel or drywell, then inspect the primary containment at least once per 8 hours or monitor the containment, steam tunnel and/or drywell air temperature at least once per hour at the locations listed in Specification 3.7.8, 4.6.1.8 and 4.6.2.6.
- b. Restore the minimum number of instruments to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.9.1 Each of the above required fire detection instruments which are accessible during unit 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 unit 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.

4.3.7.9.2 The NFPA Standard 72D supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

AECM-BB/0243

(DELETED)

Changes made in Amendment 68
are not yet implemented by
Energy Operations - GGNs.

TABLE 3.3.7.9-1
FIRE DETECTION INSTRUMENTATION

<u>INSTRUMENT LOCATION</u>			<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> (X/Y)	<u>FLAME</u> (X/Y) ⁽¹⁾	<u>SMOKE</u> (X/Y) ⁽¹⁾
a. <u>CONTAINMENT BUILDING #</u>					
1. Return Duct Mounted Detectors					3/0
<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>			
b. <u>CONTROL BUILDING</u>					
1. Zone 1-3					12/0
OC103	93'	H. P. Checkout			
OC109	93'	Decontamination Area			
OC115	93'	Corridor			
OC116	93'	Hot Machine Shop			
OC117	93'	Corridor			
OC128	93'	Hot Water Heater Rm.			
2. Zone 1-4					12/0
OC201	111'	Stairwell			
OC202	111'	Div. I Swgr. Rm.			
OC207	111'	Div. I Battery Rm.		0/13(CO 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.

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

(1) Smoke and flame detectors provide only early warning capability with the exception of:

- Zone 1-27 detectors trip closed the door between the OC208/OC208A Remote Shutdown panel rooms.
- Containment building return duct mounted detectors trip the containment cooler fans.
- Zone 1-11 and 1-13 detectors initiate the control building purge fan system.
- Control Room HVAC Intake Plenum Detectors trip the control room A/C units unless a control room emergency filtration system isolation mode automatic actuation signal is present.

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

	ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
				HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
3. Zone 1-5						3/0
	OC209	111'	Div. III Battery Rm.			
	OC210	111'	Div. III Swgr. Rm.	0/4(CO ₂)		
4. Zone 1-6						10/0
	OC211	111'	Div. II Battery Rm.			
	OC215	111'	Div. II Swgr. Rm.	0/7(CO ₂)		
	OC216	111'	West Corridor			
5. Zone 1-07						5/0
	OC212	111'	U-2 Div. I Battery Rm.			
	OC214	111'	U-2 Div. I Swgr. Rm.			
6. Zone 1-08						5/0
	OC203	111'	U-2 Div. II Swgr. Rm.			
	OC206	111'	U-2 Div II Battery Rm.			
7. Zone 1-10						2/0
	OC306	133'	Electrical Chase			
	OC307	133'	Electrical Chase			
8. Zone 1-11						13/0
	OC302	133'	HVAC Equipment Rm.			
	OC308	133'	Corridor			
9. Zone 1-12						2/0
	OC304	133'	Electrical Space			
	OC305	133'	Electrical Space			
	OC412	133'	Electrical Space			
10. Zone 1-13						16/0
	OC303	133'	HVAC Equipment Rm.			
11. Zone 1-14						9/0
	OC402A	148'	HVAC Chase			
	OC403	148'	Computer Room	0/12(Halon)		
	OC410	148'	Battery Room			
12. Zone 1-15						15/0
	OC401	148'	Corridor			
	OC402	148'	Lower Cable Spreading Room	0/9(CO ₂)		
	OC407	148'	Instr. Motor Gen. Rm.	0/2(CO ₂)		
	OC408	148'	Corridor			
	OC409	148'	Electrical Chase			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> <u>(X/Y)</u>	<u>FLAME</u> <u>(X/Y)</u> ⁽¹⁾	<u>SMOKE</u> <u>(X/Y)</u> ⁽¹⁾
13. Zone 1-16					13/0
OC405	148'	U-2 Lower Cable Spreading Room			
OC412	148'	U-2 Electrical Space			
14. Zone 1-18					31/0
OC502	166'	U-2 Instr. Rack Area			
OC503	166'	Control Room			
OC504	166'	U-1 Instr. Rack Area			
OC516	166'	Electrical Space			
OC517	166'	Electrical Space			
15. Zone 1-19					9/0
OC507	166'	Aux. Instrument Shop			
OC509	166'	Corridor			
OC510	166'	Office			
OC511	166'	Dining Area			
OC512	166'	Kitchen			
OC514	166'	Locker Room			
OC515	166'	Corridor			
16. Zone 1-20					1/0
OC708A	189'	HVAC Chase			
17. Zone 1-21					2/0
OC518	166'	Electrical Chase			
OC611	177'	Electrical Chase			
18. Zone 1-22					16/0
OC601	177'	Viewing Gallery			
OC602	177'	Corridor No. 1			
OC603	177'	Emergency Dormitory			
OC604	177'	Computer Room			
OC605	177'	Janitor's Closet			
OC608	177'	Technical Support			
OC608B	177'	HVAC Chase			
OC613	177'	Corridor			
OC614	177'	Corridor			
OC616	177'	Storage Closet			
OC617	177'	Electrical Chase			
OC618	177'	Electrical Chase			
OC619	177'	Electrical Chase			
OC613	177'	Stair			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

	<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
				<u>HEAT</u> (X/Y)	<u>FLAME</u> (X/Y) ⁽¹⁾	<u>SMOKE</u> (X/Y) ⁽¹⁾
19.	Zone 1-23					21/0
	OC702	189'	Upper Cable Spreading Room	0/12(CO ₂)		
	OC706	189'	West Corridor			
	OC707	189'	Instr. Motor Gen. Rm.			
	OC709	189'	Electrical Chase			
	OC711	189'	Passage			
	OC712	189'	HVAC Room			
20.	Zone 1-24					6/0
	OC703	189'	Control Cabinet Area	4/0 (CO ₂)		
21.	Zone 1-26					16/0
	OC705	189'	U-2 Upper Cable Spreading Room			
	OC708	189'	U-2 Instr. Motor Gen. Rm.			
22.	Zone 1-27					2/0
	OC208	111'	Div. II Remote Shutdown Panel	0/1(CO ₂)		
	OC208A	111'	Div. I Remote Shutdown Panel	0/1(CO ₂)		
23.	Control Room HVAC Intake Plenum Mounted Detectors					2/0
c.	<u>AUXILIARY BUILDING</u>					
1.	Zone 2-2					28/0
	1A211	119'	North Corridor (Partial)			
	1A215	119'	South Corridor (Partial)			
	1A222	119'	West Corridor			
2.	Zone 2-3					5/0
	1A219	119'	Electrical Swgr. Rm.	0/2(CO ₂)		
	1A220	119'	Piping Penetration Room			
	1A221	119'	Electrical Swgr. Rm.	0/2(CO ₂)		
3.	Zone 2-4					22/0
	1A102	93'	RHR "A" Heat Ex. Rm.			
	1A103	93'	RHR "A" Pump Rm.			
	1A104	93'	RCIC Pump Rm.			
	1A105	93'	RHR "B" Pump Rm.			
	1A106	93'	RHR "B" Heat Ex. Rm.			
	1A128	108'	RHR "A" Heat Ex. Rm.			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
			HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
3. Zone 2-4 (Continued)					
1A129	108'	RHR "B" Heat Ex. Rm.			
1A202	119'	RHR "A" Heat Ex. Rm.			
1A203	119'	Piping Penetration Rm.			
1A204	119'	Piping Penetration Rm.			
1A205	119'	Piping Penetration Rm.			
1A206	119'	RHR "B" Heat Ex. Rm.			
1A207	119'	Electrical Swgr. Rm.	0/3(CO ₂)		
1A208	119'	Electrical Swgr. Rm.	0/3(CO ₂)		
1A209	115'	RWCU Recirc Pump "A" Rm.			
1A210	115'	RWCU Recirc Pump "B" Rm.			
1A223	128'	Passage			
4. Zone 2-5					5/0
1A318	139'	Electrical Penetration Room	0/2(CO ₂)		
1A319	139'	RPV Instr. Test Rm.			
1A320	139'	Electrical Penetration Room	0/2(CO ₂)		
5. Zone 2-6					27/0
1A301	139'	East Corridor			
1A302	139'	Southeast Corridor			
1A303	139'	RHR "A" Heat Ex. Rm.			
1A304	139'	Piping Penetration Rm.			
1A306	139'	Piping Penetration Rm.			
1A307	139'	RHR "B" Heat Ex. Rm.			
1A308	139'	Electrical Penetration Room	0/3(CO ₂)		
1A309	139'	Electrical Penetration Room	0/3(CO ₂)		
1A314	139'	South Corridor (Partial)			
1A316	139'	North Corridor (Partial)			
6. Zone 2-7					18/0
1A417	166'	North Corridor (Partial)			
1A420	166'	South Corridor (Partial)			
1A424	166'	Set Down Area (Partial)			
1A428	166'	West Corridor			
1A430	166'	CRD Repair Rm.			
1A432	166'	FPC & CU Pump Rm.			
1A434	166'	South Passage			

NL-88/13

Changes made in Amendment 68
are not yet implemented by
Entergy Operations - GEN.S.

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
			HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
7. Zone 2-8					27/0
1A401	166'	Northeast Corridor			
1A402	166'	Steam Tunnel Roof			
1A403	166'	Southeast Corridor			
1A404	166'	Unassigned Area			
1A405	166'	Containment Vent. Equip. Room			
1A406	166'	Containment Exhaust Filter Rm.			
1A407	166'	MCC Area	0/2(CO ₂)		
1A410	166'	MCC Area	0/2(CO ₂)		
1A417	166'	North Corridor (Partial)			
1A420	166'	South Corridor (Partial)			
1A424	166'	Set Down Area (Partial)			
8. Zone 2-9					12/0
1A519	185'	Storage Area			
1A519A	185'	Snubber Test Room			
1A519B	185'	Snubber Test Control Room			
1A524	195'	Platform			
1A527	185'	Load Center Area			
1A529	185'	FPC & CU Rm.			
1A538	185'	Platform			
9. Zone 2-13					31/0
1A602	208'	Storage Area			
1A603	208'	Passage			
1A604	208'	Fuel Handling Area			
1A506	245'	HVAC Equip. Area			
10. Zone 2-14					17/0
1A114	93'	Fan Coil Area (Partial)			
1A115	93'	Piping Penetration Rm.			
1A116	93'	Piping Penetration Rm.			
1A117	93'	Misc. Equip. Area (Partial)			
1A118	93'	RHR "C" Pump Room			
1A119	93'	LPCS Pump Room			
1A120	93'	CCW Pump & Heat Ex. Rm.			
1A122	103'	South Corridor (Partial)			
1A123	103'	North Corridor (Partial)			
11. Zone 2-15					1/0
1A539	185'	Cable Chase			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
			HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
12. Zone 2-17					18/0
1A101	93'	Passage			
1A109	93'	HPCS Pump Rm.			
1A111	93'	Piping Penetration Rm.			
1A114	93'	Fan Coil Area (Partial)			
1A117	93'	Misc. Equip. Area (Partial)			
1A121	103'	East Corridor			
1A122	103'	South Corridor (Partial)			
1A123	103'	North Corridor (Partial)			
13. Zone 2-18					20/0
1A201	119'	East Corridor			
1A211	119'	North Corridor (Partial)			
1A215	119'	South Corridor (Partial)			
14. Zone 2-19					15/0
1A314	139'	South Corridor (Partial)			
1A316	139'	North Corridor (Partial)			
1A321	139'	MCC Area			
1A322	139'	Centrifugal Chiller Area			
1A323	139'	SGTS Area			
1A324	139'	HVAC Equip. Area			
1A326	139'	SGTS Area			
15. Zone 2-20					2/0
1A305	139'	Steam Tunnel			
16. Zone 2-21					4/0
1A12	185'	Stairwell			
1A12	208'	Stairwell			
1A12	245'	Stairwell			
d. DIESEL GENERATOR BUILDING					
1. Zone 2-10				9/0	
1D301	133'	Corridor	0/3 (Deluge)		
1D304	133'	Day Tank Area			
1D306	133'	Div. III Diesel Gen. Room			
1D401	158'	Div. III Diesel Gen. Room	0/7 (Deluge)		
2. 2-11				6/0	
1D303	133'	Day Tank Area			
1D308	133'	Div. II Diesel Gen. Room			
1D402	158'	Div. II Diesel Gen. Room	0/7 (Deluge)		

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> (X/Y)	<u>FLAME</u> ⁽¹⁾ (X/Y)	<u>SMOKE</u> ⁽¹⁾ (X/Y)
3. Zone 2-12				6/0	
1D302	133'	Day Tank Area			
1D310	133'	Div. I Diesel Gen. Room			
1D403	158'	Div. I Diesel Gen. Room	0/7 (Deluge)		
e. <u>STANDBY SERVICE WATER PUMP HOUSE</u>					
1. Zone 2-1					4/0
1M110	133'	SSW Pump Rm. A			
1M112	133'	SSW Valve Rm. A			
2M110	133'	SSW Pump Rm. B			
2M112	133'	SSW Valve Rm. B			
f. <u>CHARCOAL FILTER TRAINS</u>					
1. Standby Gas Treatment System Filter Trains A & B				2/0 (Allison Thermistor Wire)	
Auxiliary Building El. 139'					
2. Control Room Standby Fresh Air System Filter Trains A & B				2/0 (Allison Thermistor Wire)	
Control Building El. 133'					
g. <u>CONTROL BUILDING (PGCC HALON SYSTEMS)</u>					
OC503	166'	Control Room (Unit 1 side)			
		Module/Halon Panel			
		1H13-U700/1H13-P900	0/10		10/0
		1H13-U701/1H13-P901	0/10		15/0
		1H13-U702/1H13-P902	0/9		14/0
		1H13-U703/1H13-P903	0/11		17/0
		1H13-U720/1H13-P920	0/7		13/0
		SH13-U730/SH13-P930	0/11		12/0
		1H13-U738/1H13-P938	0/10		12/0
		SH13-U739/SH13-P939	0/5		14/0

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
			HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
0C504	168'	Unit 1 Instrument Rack Area			
		Module/Halon Panel			
		1H13-U710/1H13-P910	0/8		15/0
		1H13-U711/1H13-P911	0/8		14/0
		1H13-U712/1H13-P912	0/8		9/0
		1H13-U714/1H13-P914	0/8		13/0
		1H13-U732/1H13-P932	0/8		14/0
		1H13-U733/1H13-P933	0/8		13/0
		1H13-U734/1H13-P934	0/8		13/0
		1H13-U735/1H13-P935	0/8		11/0
0C703	189'	Unit 1 Instrument Rack Area			
		Module/Halon Panel			
		1H13-U713/1H13-P913	0/9		15/0
		1H13-U715/1H13-P915	0/8		10/0
		1H13-U717/1H13-P917	0/8		15/0
		1H13-U736/1H13-P936	0/8		14/0
		1H13-U737/1H13-P937	0/8		10/0

PLANT SYSTEMS

3/4.7.6 FIRE SUPPRESSION SYSTEMS

(DELETED)

FIRE SUPPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 The fire suppression water system shall be OPERABLE with:

- a. At least two OPERABLE fire suppression fire pumps, each with a capacity of 1500 gpm, with their discharge aligned to the fire suppression header,
- b. Separate fire water storage tanks, each with a minimum contained volume of 210,000 gallons, and
- c. An OPERABLE flow path capable of taking suction from the "A" fire water storage tank and the "B" fire water storage tank and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves, the last valve ahead of the water flow alarm device on each sprinkler or hose standpipe and the last valve ahead of the deluge valve on each deluge or spray system required to be OPERABLE per Specifications 3.7.6.2, 3.7.6.5, and 3.7.6.6.

APPLICABILITY: At all times.

ACTION:

- a. With one of the above required fire pumps and/or one fire water storage tank inoperable, restore the inoperable equipment to OPERABLE status within 7 days or provide an alternate backup pump or supply. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- b. With the fire suppression water system otherwise inoperable, establish a backup fire suppression water system within 24 hours.

SURVEILLANCE REQUIREMENTS

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4.7.6.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the minimum contained water supply volume.
- b. At least once per 31 days by starting the electric motor driven fire suppression pump and operating it for at least 15 minutes.
- c. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path is in its correct position.
- d. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

~~PLANT SYSTEMS~~

(DELETED)

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 12 months by performance of a system flush.
- 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 fire suppression pump develops at least 1500 gpm at a system head of 275 feet,
 - 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 fire suppression pump starts sequentially to maintain the fire suppression water system pressure greater than or equal to 120 psig.
- g. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

4.7.6.1.2 The diesel driven fire suppression pump shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1. Verifying the fuel storage tank contains at least 300 gallons of fuel.
 - 2. Starting the diesel driven pump from ambient conditions and operating for greater than or equal to 30 minutes.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-75, is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.
- c. At least once per 18 months, during shutdown, by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.

~~PLANT SYSTEMS~~

(DELETED)

SURVEILLANCE REQUIREMENTS (Continued)

4.7.6.1.3 The diesel driven fire pump starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 - 1. The electrolyte level of each cell in each battery is above the plates, and
 - 2. The overall battery set voltage is greater than or equal to 24 volts.
- b. At least once per 92 days by verifying that the specific gravity for each cell is appropriate for continued service of the battery. The specific gravity, corrected to 77°F and full electrolyte level, shall be greater than or equal to 1.20.
- c. At least once per 18 months by verifying that:
 - 1. The battery case and battery racks show no visual indication of physical damage or abnormal deterioration, and
 - 2. Battery terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

~~PLANT SYSTEMS~~

(DELETED)

~~SPRAY AND/OR SPRINKLER SYSTEMS~~LIMITING CONDITION FOR OPERATION

3.7.6.2 The following spray/sprinkler systems shall be OPERABLE:

a. Diesel Generator Building

- | | |
|---|------------|
| 1. Diesel Generator A pre-action sprinkler system | W1P64D142A |
| 2. Diesel Generator B pre-action sprinkler system | W1P64D142B |
| 3. Diesel Generator C pre-action sprinkler system | W1P64D142C |

b. Auxiliary Building^a

- | | |
|--|-----------|
| 1. Elevation 93'/103' Northeast Corridor | W1P64D150 |
| 2. Elevation 119' Northeast Corridor | W1P64D151 |
| 3. Elevation 139' Northeast Corridor | W1P64D152 |
| 4. Elevation 166' Northeast Corridor | W1P64D153 |
| 5. Elevation 119' West Corridor | W1P64D158 |
| 6. Elevation 139' West Corridor | W1P64D159 |
| 7. Elevation 166' Northwest Corridor | W1P64D162 |

c. Control Building^a

- | | |
|------------------------------------|-----------|
| 1. Elevation 148' Lower Cable Room | W1P64D154 |
| 2. Elevation 189' Upper Cable Room | W1P64D155 |
| 3. Elevation 93' | WSP64D140 |

d. Fire Pump House^a

WSP64D136A/B

APPLICABILITY: Whenever equipment protected by the spray/sprinkler systems is required to be OPERABLE.

ACTION:

- With one or more of the above required spray and/or sprinkler systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.2 The above required spray and sprinkler systems shall be demonstrated OPERABLE:

- At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path is in its correct position.

^aWet pipe sprinkler system.

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~~PLANT SYSTEMS~~

(DELETED)

SURVEILLANCE REQUIREMENTS Continued)

- b. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- c. 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 a visual inspection of the dry pipe spray and sprinkler headers to verify their integrity, and
 - 3. By a visual inspection of each nozzle's spray area to verify that the spray pattern is not obstructed.

~~PLANT SYSTEMS~~~~CO₂ SYSTEMS~~

(DELETED)

LIMITING CONDITION FOR OPERATION3.7.5.3 The following low pressure CO₂ systems shall be OPERABLE:

<u>Area</u>	<u>Location</u>	<u>System Number</u>
Electrical Penetration Room	Auxiliary Bldg. E1. 139'0"	N1P64D201A, B, C, D
Electrical Penetration Room	Auxiliary Bldg. E1. 119'0"	N1P64D200A, B, C, D
Control Cabinet Room	Control Bldg. E1. 189'0"	N1P64D216
Division I Switchgear Room	Control Bldg. E1. 111'0"	N1P64D207
Division III Switchgear Room	Control Bldg. E1. 111'0"	N1P64D209
Division II Switchgear Room	Control Bldg. E1. 111'0"	N1P64D208
Emergency Shutdown Panel Rm	Control Bldg. E1. 111'0"	N1P64D212
Motor Generator Room	Control Bldg. E1. 148'0"	N1P64D214B
Electrical Switchgear Room	Auxiliary Bldg. E1. 166'0"	N1P64D217A, B
Lower Cable Spreading Room	Control Bldg. E1. 148'0"	N1P64D213
Upper Cable Spreading Room	Control Bldg. E1. 189'0"	N1P64D215

APPLICABILITY: Whenever equipment protected by the CO₂ systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required CO₂ systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. The provisions of Specification 3.0.3 and 3.0.4 are not applicable.

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~~PLANT SYSTEMS~~

(DELETED)

SURVEILLANCE REQUIREMENTS

4.7.6.3.1 Each of the above required CO₂ systems shall be demonstrated OPERABLE at least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path is in its correct position. Position verification of differential pressure selector valves is not required, however, the valves' release levers shall be verified to be in the correct position.

4.7.6.3.2 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 60% and pressure to be greater than 275 psig, and
- b. At least once per 18 months by:
 1. Verifying that the system valves and associated ventilation system fire damper logic actuates automatically or manually, if applicable, upon receipt of a simulated actuation signal (actual CO₂ release, electrothermal link burning, and differential pressure valve opening may be excluded from this test), and
 2. Flow from each nozzle by performance of a "Puff Test", and
 3. Exercising each ventilation system fire damper to the closed position and verifying the dampers move freely.

~~PLANT SYSTEMS~~~~HALON SYSTEMS~~

(DELETED)

LIMITING CONDITION FOR OPERATION

3.7.6.4 The following Halon systems shall be OPERABLE with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure:

- a. Control Building, elev. 148'0", Computer and Control Panel Room
- b. Control Building, elev. 166'0", PGCC Under Floor Area
- c. Control Cabinet Room, elev. 189'0", PGCC Under Floor Area

APPLICABILITY: Whenever equipment protected by the Halon systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required Halon systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.4 Each of the above required Halon systems shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, except for hazard area selector valves F497G and F497H, in the flow path is in its correct position.
- b. At least once per 6 months by verifying Halon storage tank weight and pressure.
- c. At least once per 18 months by:
 1. Verifying that the system, including associated ventilation system fire damper logic, actuates automatically upon receipt of a simulated actuation signal (Actual Halon release, Halon bottle initiator valve actuation, and electro-thermal link burning may be excluded from the test), and
 2. Performance of a flow test through headers and nozzles to assure no blockage, and
 3. Exercising each ventilation system fire damper to the closed position and verifying the dampers move freely.

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~~PLANT SYSTEMS~~

~~FIRE HOSE STATIONS~~

(DELETED)

LIMITING CONDITION FOR OPERATION

~~3.7.6.5~~ The fire hose stations shown in Table 3.7.6.5-1 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 3.7.6.5-1 inoperable, route an additional fire hose of equal or greater diameter to the unprotected area(s) from an OPERABLE hose station within 1 hour if the inoperable fire hose is the primary means of fire suppression; otherwise, route the additional hose within 24 hours.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.5 Each of the fire hose stations shown in Table 3.7.6.5-1 shall be demonstrated OPERABLE:

- a. At least once per 31 days by a visual inspection of the fire hose stations accessible during plant operation to assure all required equipment is at the station.
- b. At least once per 18 months by:
 - 1. Visual inspection of the fire hose stations not accessible during plant operation to assure all required equipment is at the station.
 - 2. Removing the hose for inspection and re-racking, and
 - 3. Inspecting all gaskets and replacing any degraded gaskets in the couplings.
- c. At least once per 3 years by:
 - 1. Partially opening each hose station valve to verify valve OPERABILITY and no flow blockage.
 - 2. Conducting a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater.

(DELETED)

TABLE 3.7.6.5-1

FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK IDENTIFICATION</u>
<u>AUXILIARY BUILDING</u>		
Q.1-6.0	103'-0"	13A
Q-5.7	119'-0"	13B
Q.1-6.1	139'-0"	13C
Q-6.0	166'-0"	13D
Q-5.9	185'-0"	13E
Q-6.0	208'-0"	13F
Q-5.8	245'-0"	13G
Q-11.3	93'-0"	14A
P.4-9.0	119'-0"	14B
P.4-9.0	139'-0"	14C
P.4-8.6	166'-0"	14D
P.4-9.5	185'-0"	14E
P-10	208'-10"	14F
P.4-12.5	139'-0"	15A
P.4-12.5	166'-0"	15B
P.4-13.1	185'-0"	15C
R-13.7	208'-10"	15D
M.2-15.1	103'-0"	16A
M.7-15.1	119'-0"	16B
L.7-15.1	139'-0"	16C
L.7-15.1	166'-0"	16D
L.7-15.1	185'-0"	16E
M.7-15.1	208'-10"	16F
H.3-13.8	103'-0"	17A
J.4-13.8	119'-0"	17B
H-13.8	139'-0"	17C
J-13.8	166'-0"	17D
G.4-11	103'-0"	18A
G.4-11.7	119'-0"	18B
G.4-12.2	139'-0"	18C
G.4-11.3	166'-0"	18D
G.4-7.5	103'-0"	19A
G.4-8.3	119'-0"	19B
G.4-7.5	139'-0"	19C
G.4-8.4	166'-0"	19D
G.6-6.4	103'-0"	20A
G.6-6.4	119'-0"	20B
H-6.2	139'-0"	20C
H-6.2	166'-0"	20D
L-6.2	103'-0"	21A
L-6.2	119'-0"	21B
L-6.2	139'-0"	21C
L-6.2	166'-0"	21D

TABLE 3.7.6.5-1 (Continued)

FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK IDENTIFICATION</u>
<u>CONTAINMENT</u>		
M.7-7.8	120'-10"	22A
H.8-8.1	135'-4"	23A
J.1-8.1	161'-10"	23B
J.8-7.2	184'-6"	23C
J.4-7.5	208'-10"	23D
M.2-7.2	135'-4"	24A
M.8-7.9	161'-10"	24B
M.2-7.2	184'-6"	24C
N-8.2	208'-10"	24D
M.6-12.4	135'-4"	25A
N.2-11.5	161'-10"	25B
N.3-11.3	208'-10"	25C
J.1-12.0	135'-4"	26A
J-11.6	161'-10"	26B
K.2-13.1	184'-6"	26C
J-11.8	208'-10"	26D

CONTROL BUILDING

J.9-18.8	133'-0"	53A
K.2-18.8	111'-0"	53B
K.1-18.8	93'-0"	53C
G.1-18.4	93'-0"	54A
G.1-18.4	111'-0"	54B
G.2-18.4	133'-0"	54C
G.1-18.7	148'-0"	54D
G.2-18.8	166'-0"	54E
G.1-18.7	189'-0"	54F
K.2-18.8	148'-0"	55A
K.2-18.8	166'-0"	55B
K.2-18.8	177'-0"	55C
K.2-18.8	189'-0"	55D

DIESEL GENERATOR BUILDING

R-10.6	133'-0"	66'
R-8.4	133'-0"	67B

~~PLANT SYSTEMS~~~~YARD FIRE HYDRANTS AND HYDRANT HOSE HOUSES~~

(DELETED)

LIMITING CONDITION FOR OPERATION

3.7.6.6 The yard fire hydrants and associated hydrant hose houses shown in Table 3.7.6.6-1 shall be OPERABLE.

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

ACTION:

- a. With one or more of the yard fire hydrants or associated hydrant hose houses shown in Table 3.7.6.6-1 inoperable, route sufficient additional lengths of fire hose of equal or greater diameter located in an adjacent OPERABLE hydrant hose house to provide service to the unprotected area(s) within 24 hours.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.6 Each of the yard fire hydrants and associated hydrant hose houses shown in Table 3.7.6.6-1 shall be demonstrated OPERABLE:

- a. At least once per 31 days by visual inspection of the hydrant hose house to assure all required equipment is at the hose house.
- b. At least once per 6 months, during March, April or May and during September, October or November, by visually inspecting each yard fire hydrant and verifying that the hydrant barrel is dry and that the hydrant is not damaged.
- c. At least once per 12 months by:
 1. Conducting a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure whichever is greater.
 2. Replacement of all degraded gaskets in couplings.
 3. Performing a flow check of each hydrant.

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(DELETED)

TABLE 3.7.6.6-1

YARD FIRE HYDRANTS AND ASSOCIATED HYDRANT HOSE HOUSESLOCATIONHYDRANT NUMBER/HYDRANT HOSE HOUSE NUMBERNorth Coord.East Coord.Elevation

9,616.00	10,500.00	133'0"	D021/HHD 029B
9,570.00	10,299.00	133'0"	D023/HHD 029C
9,570.00	10,012.50	133'0"	D024/HHD 029D
9,798.00	9,979.00	133'0"	D025/HHD 029E
10,112.50	9,753.92	133'0"	D010/HHD 029G
9,886.00	9,758.25	133'0"	D009/HHD 029Q
9,641.00	9,766.25	133'0"	D008/HHD 029F
10,097.12	10,500.00	133'0"	D019/HHD 029I
9,871.87	10,534.33	133'0"	D020/HHD 029A

PLANT SYSTEMS

(DELETED)

3/4.7.7 FIRE RATED ASSEMBLIESLIMITING CONDITION FOR OPERATION

3.7.7 All fire rated assemblies (walls, floor/ceilings, cable tray enclosures and other fire barriers) separating safety related fire areas or separating portions of redundant systems important to safe shutdown within a fire area, and all sealing devices in fire rated assembly penetrations (fire doors, fire windows, fire dampers, cable and piping penetration seals and ventilation seals) shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more of the above required fire rated assemblies and/or sealing devices inoperable, within one hour establish a continuous fire watch on at least one side of the affected assembly(s) and/or sealing device(s) or verify the OPERABILITY of fire detectors on at least one side of the inoperable assembly(s) and/or sealing device(s) and establish an hourly fire watch patrol.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each of the above required fire rated assemblies and sealing devices shall be verified OPERABLE at least once per 18 months by performing a visual inspection of:

- a. The exposed surfaces of each fire rated assembly.
- b. Each fire damper and associated hardware.
- c. At least 10 percent of each type of sealed penetration. If apparent changes in appearance or abnormal degradations are found, a visual inspection of an additional 10 percent of each type of sealed penetration shall be made. This inspection process shall continue until a 10 percent sample with no apparent changes in appearance or abnormal degradation is found. Samples shall be selected so that each penetration seal will be inspected at least once per 15 years.

AECM-88/0343

PLANT SYSTEMS

(DELETED)

SURVEILLANCE REQUIREMENTS (Continued)

5.7.7.2 Each of the above required fire doors shall be verified OPERABLE by inspecting the automatic hold-open, release and closing mechanism and latches at least once per 6 months, and by verifying:

- a. The OPERABILITY of the fire door supervision system for each electrically supervised fire door by performing a CHANNEL FUNCTIONAL TEST at least once per 31 days.
- b. That each locked-closed fire door is closed at least once per 7 days.
- c. That doors with automatic hold-open and release mechanisms are free of obstructions at least once per 24 hours and performing a functional test of these mechanisms at least once per 18 months.
- d. That each unlocked fire door without electrical supervision is closed at least once per 24 hours.

INSTRUMENTATIONBASES3/4.3.7.6 SOURCE RANGE MONITORS

The source range monitors provide the operator with information of the status of the neutron level in the core at very low power levels during startup and shutdown. At these power levels, reactivity additions should not be made without this flux level information available to the operator. When the intermediate range monitors are on scale adequate information is available without the SRMs and they can be retracted.

The SRMs are required OPERABLE in OPERATIONAL CONDITION 2 to provide for rod block capability, and are required OPERABLE in OPERATIONAL CONDITIONS 3 and 4 to provide monitoring capability which provides diversity of protection to the mode switch interlocks.

3/4.3.7.7 TRAVERSING IN-CORE PROBE SYSTEM

The OPERABILITY of the traversing in-core probe system with the specified minimum complement of equipment ensures that the measurements obtained from use of this equipment accurately represent the spatial neutron flux distribution of the reactor core.

The TIP system OPERABILITY is demonstrated by normalizing all probes (i.e., detectors) prior to performing an LPRM calibration function. Monitoring core thermal limits may involve utilizing individual detectors to monitor selected areas of the reactor core, thus all detectors may not be required to be OPERABLE. The OPERABILITY of individual detectors to be used for monitoring is demonstrated by comparing the detector(s) output with data obtained during the previous LPRM calibrations.

3/4.3.7.8 CHLORINE DETECTION SYSTEM

DELETED

3/4.3.7.9 FIRE DETECTION INSTRUMENTATION

(DELETED)

OPERABILITY of the detection instrumentation ensures that both adequate warning capability is available for the prompt detection of fires and that fire suppression systems, that are actuated by fire detectors, will discharge extinguishing agent in a timely manner. Prompt detection and suppression 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, increasing the frequency of fire watch patrols in the affected area(s), or zone(s), is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY.

PLANT SYSTEMSBASES3/4.7.6 FIRE SUPPRESSION SYSTEMS

(DELETED)

The OPERABILITY of the fire suppression system insures 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 systems, halon systems 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 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.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of halon in the halon storage tanks by verifying the weight and pressure of the tanks.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant.

The surveillance requirements for spray and sprinkler systems provide for periodic visual inspections to ensure that temporary structures/objects do not impair the spray patterns which have been established in accordance with the GGNS fire protection design requirements.

3/4.7.7 FIRE RATED ASSEMBLIES

(DELETED)

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, fire barrier penetrations for conduits, cable trays and piping, fire windows, fire dampers, and fire doors are periodically inspected to verify their OPERABILITY.

3/4.7.8 AREA TEMPERATURE MONITORING

The area temperature limitations ensure that safety-related equipment will not be subjected to temperatures in excess of their environmental qualification temperatures. Exposure to excessive temperatures may degrade equipment and can cause loss of its OPERABILITY. The temperature limits include allowance for instrument error.

ADMINISTRATIVE CONTROLSUNIT STAFF (Continued)

- c. A health physics technician* shall be onsite when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling 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 the Shift Superintendent, the STA, the two other members of the minimum shift crew necessary for safe shutdown of the unit, and any personnel required for other essential functions during a fire emergency. At least one AO shall be available to respond to non-fire-fighting commands from the Control Room.~~
- f. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., senior reactor operators, reactor operators, health physicists, auxiliary operators, and key maintenance personnel.

Adequate shift coverage shall be maintained without routine heavy use of overtime. However, in the event that unforeseen problems require substantial amounts of overtime to be used, the following guidelines shall be followed:

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
2. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any seven-day period, all excluding shift turnover time.
3. A break of at least eight hours should be allowed between work periods, including shift turnover time.
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized by the GGNS General Manager or his designee, or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures such that individual overtime shall be reviewed monthly

*The number of health physics technicians ~~and Fire Brigade~~ personnel 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 CONTROLSRESPONSIBILITIES (Continued)

- f. Reports of violations of codes, regulations, orders, Technical Specifications, or Operating License requirements having nuclear safety significance or reports of abnormal degradation of systems designed to contain radioactive material.
- g. Reports of significant operating abnormalities or deviations from normal and expected performance of plant equipment that affect nuclear safety.
- h. Review of all REPORTABLE EVENTS.
- i. All recognized indications of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems, or components.
- j. The plant Security Plan and changes thereto.
- k. The Emergency Plan and changes thereto.
- l. Items which may constitute a potential nuclear safety hazard as identified during review of facility operations.
- m. Investigations or analyses of special subjects as requested by the Chairman of the Safety Review Committee.
- n. Changes to the PROCESS CONTROL PROGRAM, OFFSITE DOSE CALCULATION MANUAL, and radwaste systems.

AUTHORITY

6.5.1.7 The PSRC shall:

- a. Recommend in writing to the GGNS General Manager approval or disapproval of items considered under 6.5.1.6.a, c, d, e, j, and k, above.
- b. Render determinations in writing to the GGNS General Manager with regard to whether or not each item considered under 6.5.1.6.a, c and d, above, constitutes an unreviewed safety question.
- c. Provide written notification within 24 hours to the SRC of disagreement between the PSRC and the GGNS General Manager; however, the GGNS General Manager shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

RECORDS

6.5.1.8 The PSRC shall maintain written minutes of each PSRC meeting that, at a minimum, document the results of all PSRC activities performed under the responsibility and authority provisions of these Technical Specifications. Copies shall be provided to the SRC.

0. Fire Protection Program and changes thereto.

RESPONSE TO STAFF RECOMMENDATIONS

On December 6, 1989 representatives of Entergy Operations - GGNS met with members of the NRC Staff to discuss issues related to implementation of Generic Letters 86/10 and 88/12 (reference: MAEC-89/0378 dated December 20, 1989). That meeting resulted in six recommendations from the Staff. The following provides our response to those recommendations.

1. Staff Recommendation:

The Technical Specifications (TS) regarding fire protection will be transferred verbatim to the Updated Final Safety Analysis Report. TS Section 1.0, "Definitions," and TS 3/4.0, "Applicability," will apply to the transferred TS.

Response:

Attachment 5 to this letter provides proposed changes to the UFSAR which show the TS relocated to the UFSAR verbatim with a note stating that the requirements of TS Section 1.0 and 3/4.0 are applicable.

2. Staff Recommendation:

The revised application for amendment will describe the administrative procedures for fire protection evaluations and associated 10CFR50.59 safety evaluations when making changes to the Fire Protection Program.

Response:

Attachment 4 to this letter provides a description of the administrative controls for the review of design changes. All 10CFR50.59 safety evaluations are performed under Site Directive 4.110, "Safety and Environmental Review and Evaluation".

3. Staff Recommendation:

UFSAR Appendix 9A will be revised to explicitly state that the Fire Hazards Analysis, which is referenced therein, is a part of the UFSAR.

Response:

Attachment 5 to this letter provides proposed changes to the UFSAR. The change to Appendix 9A is revised to state that the Fire Hazards Analysis is considered part of the Fire Protection Program described in Appendix 9B of the UFSAR and subject to the provisions of the proposed OL Condition 2.C.(41).

4. Staff Recommendation:

The proposed license condition will specify the revision of the UFSAR which contains the approved Fire Protection Program and the revised application will identify the sections of the UFSAR and other documents, if any, which contain the approved program. In this regard, the staff said the alternate shutdown cooling descriptions in UFSAR Sections 7.4.1.4 and 7.4.1.5 should be a part of the Fire Protection Program. The licensee will consider this recommendation.

Response:

- a. Attachment 2 to this letter provides proposed changes to the GGNS Operating License Condition 2.C.(41). The OL condition has been revised to specify UFSAR Revision 4 as the revision containing the approved Fire Protection Program. Attachment 2, Section C.2.b has been revised to identify the sections of the UFSAR that contain the approved GGNS Fire Protection Program.
- b. UFSAR Section 7.4.1.4 describes the Remote Shutdown System. This system provides the necessary controls and instrumentation outside the control room, for reactor systems and secondary support systems needed for prompt hot shutdown of the reactor, in the event that the main control room becomes uninhabitable for causes other than a control room exposure fire. We do not consider Section 7.4.1.4 to be part of the Fire Protection Program.

UFSAR Section 7.4.1.5 provides a discussion of the minimum requirements of safe shutdown assuming a completely disabled control room resulting from fire damage. That section describes the Alternate Shutdown System which utilizes a portion of the Remote Shutdown System (division 1 panel) as well as other local controls and indications for components which are required to support those systems controlled from the division 1 remote shutdown panel. We consider Section 7.4.1.5 to be part of the Fire Protection Program.

UFSAR Appendix 9B, Fire Protection Program, will be revised to reference UFSAR Section 7.4.1.5 clarifying that the Alternate Shutdown System is considered part of the Fire Protection Program (see Attachment 5 to this letter).

5. Staff Recommendation:

The Staff said the new license condition for fire protection should remain subject to License Condition 2.f., which required reporting of any violation of a license condition. The licensee had proposed removing the new fire protection license condition from this requirement on the basis that it may conflict with 10CFR 50.72 reporting requirements. The licensee will consider Staff's recommendation.

Response:

Section 2.F of the Operating License currently requires that GGNS report any violation of the requirements contained in OLC 2.C.(23) within twenty-four (24) hours in accordance with 10CFR50.72 with written follow-up in accordance with 10CFR50.73. The Staff has indicated that the intent of this reporting requirement is to require reports of "major" deficiencies rather than "minor" deficiencies. However, no specific criteria is provided as to what constitutes a "major" violation.

Generic Letter 86-10, Section E, "Notification of the NRC When Deficiencies are Discovered" states that the NRC should be notified of fire protection deficiencies which meet the criteria of 10CFR50.72 or 10CFR50.73. Accordingly, we have proposed that the fire protection OL condition be excluded from the OL Condition 2.F reporting requirement because Condition 2.F lacks the specific criteria provided by 10CFR50.72 and 50.73 for making reportability determinations for fire protection deficiencies. GGNS has committed to report significant fire protection degradations in accordance with 10CFR50.72, 10CFR50.73 and 10CFR21 (Reference: Attachment 2, Section C.1.d). We believe this change to be consistent with the guidance provided in GL 88-12 and the precedent established at the Callaway and Wolf Creek plants which are the lead plants for this issue.

6. Staff Recommendation:

The licensee will review the staff's draft safety evaluations (SEs) which will be included by reference in the new license condition. Comments on the SEs to identify any factual or updating changes believed to be needed will be provided by letter.

Response:

The comments on the draft safety evaluations were provided to the Staff at a meeting held at the GGNS site on June 15, 1990.

DESCRIPTION OF THE ADMINISTRATIVE CONTROLS
FOR THE REVIEW OF DESIGN CHANGES

Nuclear Plant Engineering (NPE) Administrative Procedure No. 317 provides guidance for the review of design changes prepared by NPE to ensure that Fire Protection and Safe Shutdown requirements are included. In addition, this procedure provides guidance for the revision and maintenance of the Fire Hazards Analysis and the Combustible Heat Load Calculation.

Fire Protection Reviews

Fire Protection Reviews are performed on design changes prepared or dispositioned by NPE (i.e., DCPs, CNs, MNCRs, DMRs) to ensure that fire protection features are provided to satisfy regulatory requirements. The Fire Protection Review consists of determining whether any safety related components have been added or relocated or whether the design change adds, removes, modifies or relocates any of the following:

- a. Combustibles
- b. Available fire protection, including:
 - (1) Suppression
 - (2) Hose Stations
 - (3) Portable Extinguishers
 - (4) Detectors
 - (5) Fire Water Pumphouse Components
- c. Equipment, components or cables that may interfere with the operation of existing fire detection or fire protection features
- d. Penetrations, penetration seals or conduit seals, including:
 - (1) Cable Penetrations
 - (2) Piping Penetrations
 - (3) Ductwork Penetrations
 - (4) Hatches
- e. Space Separators, including:
 - (1) Walls/Ceilings/Floors
 - (2) Doors
 - (3) Curbs
 - (4) Dampers
- f. Fireproofing, exposure fire protection, cable tray covers/wrapping, conduit wrapping

The Fire Protection Review is performed during the design, prior to issuing the design change for construction. The Responsible Engineer completes the Fire Protection Review Form and if it is determined that the design change has no impact on fire protection, no further review is required. However, if upon completion of the Fire Protection Review Form the Responsible Engineer determines that the design change may impact the Fire Protection Program, then the Fire Protection Review Form, along with the design change, is routed to the Fire Protection Reviewer for review and concurrence.

The Fire Protection Reviewer determines if adequate fire protection features are included in the design change. Consideration is given to the sources of ignition, the types and locations of combustibles, the location of nearby safety-related equipment, the production of possible toxic or corrosive gases, minimizing the release of radioactive material, the effects of ventilation, and the safety of plant personnel. If adequate fire protection features are not included in the design change, additional fire protection features shall be incorporated prior to issuing the design change for construction.

The Fire Protection Reviewer shall determine if an evaluation should be performed by a Qualified Fire Protection Engineer for design changes which deviate from tested configurations. Any evaluations performed in support of a fire protection review shall be referenced and attached to the review form. In addition, the Fire Protection Reviewer shall determine if a change to the Combustible Heat Load Calculation and/or the Fire Hazards Analysis is required.

Safe Shutdown Reviews

Safe Shutdown Reviews are performed on design change documents prepared or dispositioned by NPE (i.e., DCPs, CNS, MNCRs, DMRs) to determine if features are provided that are capable of limiting fire damage to one train of systems necessary to achieve and maintain cold shutdown conditions. The safe shutdown review identifies the potential for affecting the ability to achieve and maintain a cold shutdown condition. This potential may exist if:

- a. The proposed modification occurs in a fire area containing redundant safe shutdown components; or
- b. The proposed modification adds, deletes, or relocates systems, structures, or components required for safe shutdown; or
- c. The proposed modification adds, deletes, or relocates non-safe shutdown circuits that share power supplies, signal sources, enclosures and raceways with safe shutdown circuits; or
- d. The proposed modification impairs function of 8-hour emergency lighting required by Section III.J of 10CFR50, Appendix R; or
- e. The proposed modification affects any safe shutdown component as described by the safe shutdown diagrams; or

f. The proposed modification affects any safe shutdown system listed below:

- 1) Nuclear Boiler System (main steam safety relief valves - a minimum of six valves which can be operated from the remote shutdown panel, must remain functional).
- 2) Residual Heat Removal Systems A and B: Suppression Pool Cooling, Alternate Shutdown Cooling and LPCI modes.
- 3) Standby Service Water Systems A and B.
- 4) Standby Diesel Generators A and B.
- 5) ECCS Rooms HVAC.
- 6) ESF Switchgear Rooms HVAC.
- 7) Standby Service Water Pumphouse HVAC.
- 8) Diesel Generator Rooms HVAC.
- 9) Remote and Alternate Shutdown Systems.
- 10) Portions of electrical distribution systems L11, L21, L51, R20, and R21 required to support the above systems.
- 11) Safeguard Switchgear and Battery Rooms HVAC.

The Safe Shutdown Review is performed during the design, prior to issuing the design change for construction. The Responsible Engineer first completes the Safe Shutdown Review Form. If upon completion of the Safe Shutdown Review Form the Responsible Engineer determines that the design change has no impact on safe shutdown, then no further review is required. However, if the Responsible Engineer determines that the design change may impact safe shutdown capability, then the Safe Shutdown Review Form along with the design change is routed to the Safe Shutdown Reviewer for review and concurrence.

The Safe Shutdown Reviewer determines if adequate separation and fire protection features as outlined in Section III.G of 10CFR50, Appendix R are included in the design change. Consideration is given to location of safe shutdown cable and equipment, separation or protection of safe shutdown cable and equipment from exposure fire, and maintaining the integrity of the emergency lighting system as required by Section III.J of 10CFR50, Appendix R. If the Safe Shutdown Reviewer determines that the applicable requirements of Section III.G and III.J of 10CFR50, Appendix R are satisfied, protection of safe shutdown capability is maintained, and no revision to the Fire Hazards Analysis Report or UFSAR is required, then the review is complete. The Safe Shutdown Reviewer provides concurrence by signature on the Safe Shutdown Review Form. If the applicable requirements of Section III.G and J of 10CFR50, Appendix R are not satisfied, or protection of safe shutdown capability is not maintained, (1) the design shall be revised to eliminate the safe shutdown exposure, (2) additional fire protection features shall be

incorporated, or (3) the Appendix R deviation is determined acceptable based on preparation of the appropriate evaluations, including 10CFR50.59 Safety Evaluation, and approval by the NRC. If a change to the Fire Hazards Analysis is required, the Safe Shutdown Reviewer so indicates on the review form and initiates a Fire Hazards Analysis Revision Request.

Fire Hazards Analysis Revisions

The Fire Hazards Analysis (FHA) describes the fire protection features for GGNS. Prior to issuing a design change for construction or prior to dispositioning a CN, DMR or an MNCR, the FHA is reviewed and when required, a revision is initiated. The FHA is updated annually to include changes as evidenced by the appropriate close-out document. The revised FHA is to be submitted to the NRC on or prior to May 7 of each year.

The Fire Protection Reviewer or Safe Shutdown Reviewer responsible for initiating changes to the FHA obtains an FHA Revision Request Number from Document Control, completes the FHA Revision Request Form and routes the form along with a reproducible mark-up of the affected page(s) to the Principal Civil Engineer for approval and signatures. The FHA Revision Request is then transmitted to the FHA File maintained by NPE Document Control.

In December of each year, NPE Document Control notifies the Principal Civil Engineer by serialized correspondence, with all applicable changes attached, that a revision is required to the FHA. The Principal Civil Engineer or Designee incorporates the changes for which installation is complete. The revised FHA is then reviewed and approved by a Qualified Fire Protection Engineer. Approval is documented by letter or memo to file co-signed by the Principal Civil Engineer. The revised FHA is forwarded to Document control for distribution. Document Control closes out the FHA Revision Request after receipt of notification by serialized correspondence from the Principal Civil Engineer that the required changes were incorporated.

Combustible Heat Load Calculation Revisions

The Combustible Heat Load Calculation provides the heat load and fire duration due to the complete combustion of the combustible materials found present in each fire zone described in the FHA.

The Fire Protection Reviewer is responsible for initiating changes to the Combustible Heat Load Calculation. It is revised in accordance with NPE Administrative Procedure No. 305, Engineering Calculations, prior to issuing a design change for construction. Each revision of the calculation is reviewed and approved by a Qualified Fire Protection Engineer.

GRAND GULF NUCLEAR STATION
PROPOSED UFSAR CHANGES
FOR GENERIC LETTER 88-12
IMPLEMENTATION

(For Information Only)

GG
UFSAR

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LIST OF TABLES (Cont.)

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9.5-16 <i>e</i>	Fire Protection System Requirements <i>e</i>	3
9C-1	Sequence of Events for Safe Shutdown in the Event of a Major Fire	1

self-contained batteries after a 15-second delay. If the first diesel-driven fire pump fails to start or cannot meet the demand, the second diesel-driven fire pump will be started automatically by its self-contained batteries after a 30-second delay. Fire pump running, fire pump stopped, loss of power to the electric motor-driven fire pump, loss of battery charge on the diesel-driven fire pumps, as well as several other operational mode equipment failures, are indicated in the control room. The fire pumps are periodically tested in accordance with the requirements of ~~Table 9.5-16~~. Appendix 16A

The electric motor-driven fire pump is supplied power through a motor control center located in the water treatment building. The power supply circuit to the electric motor-driven fire pump is protected by a load center supply circuit breaker, a load center feeder circuit breaker, and an electric fire pump motor controller circuit breaker. Selection and setting of the protective trip devices for the aforementioned circuit breakers is in accordance with the guidance provided in NFPA 20-1978 and has been approved for Grand Gulf's use by American Nuclear Insurers (ANI).

The electric fire pump motor controller circuit breaker provides instantaneous short circuit protection and time delay, a locked rotor current protection. The trip setting (adjusted to the manufacturer's recommendation) does not permit a circuit breaker trip at locked rotor current (LRC) unless LRC is sustained for at least 13 to 19 seconds. Locked rotor current (1050 amps) would be supplied for two to three times the normal starting time (5 to 6 seconds), permitting the normal starting of the motor without tripping the electric fire pump motor controller circuit breaker. This protective trip setting meets the guidance provided in NFPA 20: the electric fire pump motor controller circuit breaker shall have a time delay of not over 20 seconds, and the breaker shall permit normal starting of the motor without tripping.

Additional short circuit and cable protection is achieved by providing protective trips of the load center supply circuit breaker and the load center feeder breaker. The load center supply circuit breaker will not trip unless the sum of the LRC and the total of the other full load currents from loads connected to the load center are maintained for at least 40 to 65 seconds. The load center feeder breaker (which feeds the electric fire pump controller) will not trip unless LRC is maintained for at least 27 to 40 seconds. Therefore, the load center supply and the load center feeder circuit breakers will not open earlier than the electric fire pump motor controller circuit breaker.

An outside, 12-inch cement-lined, cast iron, underground yard loop surrounds the entire power block and provides water to hydrants, wet standpipes, hose stations, deluge spray systems,

and sprinkler systems. Post-indicator valves are provided for isolating portions of the systems, as required. Fire fighting water system valves have electrical supervision or a locking device and tamper-proof seals, and are periodically inspected in accordance with the requirements of ~~Table 9.5-16~~. Two-way hydrants are provided on the yard main at approximately 250-foot intervals. Each fire hydrant is provided with an isolation valve in order to isolate the hydrant in the event of physical damage and/or mechanical malfunction. Provided for each hydrant is a hose house equipped with 250 feet of 2-1/2-inch, lined fire hose, two 2-1/2-inch adjustable spray nozzles, one prybar, spanner wrenches, adjustable hydrant wrenches, and one fire axe. The fire water pumps are capable of providing water to any point in the station with the shortest leg of the main fire water loop out of service.

The fire water system in the control building functions primarily as a backup fire fighting source. The water supply to the diesel generator building provides both the primary and backup fire fighting source. The water suppression systems and standpipes in the control building are supplied from a single connection from the underground fire water loop. The water suppression systems and standpipes in the diesel generator building are supplied from a single connection from the underground fire water loop. Therefore, a single line break in the loop connection would only negate all permanent water fire suppression systems in the respective buildings. However, a number of alternative backup measures are available in such an event.

Located adjacent to the diesel generator building are outdoor hose houses. Section valves in the underground fire loop allow yard fire hydrants to operate even if the single building connection is lost due to a break in the line. In addition to the outdoor hoses, multiple 1-1/2 inch hose streams are accessible to the diesel generator building from the auxiliary building.

In the event that a break occurred in the control building fire water loop connection, operation of the gaseous fire suppression systems would not be affected. Portable water extinguishers are available throughout the building and provide a backup to the gaseous suppression system. Areas normally served by water suppression systems can be reached by multiple 1-1/2 inch hose streams from the turbine building. A hose connection has been installed in the standby fresh air filter deluge connections to enable connecting the turbine building fire hose and utilizing the turbine building fire loop as a deluge source.

9.5.1.4 Inspection and Testing Requirements

Inspection and testing of fire protection systems and components prior to placement in service is discussed in Table 9.5-11, section C. Inspection and testing after systems and components are in operation, are discussed in Table 9.5-11, section C, ~~Table 9.5-16~~, and in Appendix 9B, and Appendix 16A.

9.5.1.5 Personnel Qualification and Training

Qualification and training of personnel are discussed in Table 9.5-11, section B, and Sections 9B.3 and 9B.10 of Appendix 9B.

9.5.1.6 Equipment Operability Appendix 16A contains

~~Table 9.5-16 lists the operability requirements for the fire protection system, the required actions to be taken when equipment is inoperable, testing, and inspection requirements. The bases for the requirements listed in Table 9.5-16 are described in subsections 9.5.1.6.1 through 9.5.1.6.3. The Table 9.5-16 requirements are implemented by GGNS plant procedures.~~

Surveillance

Appendix 16A

9.5.1.6.1 Fire Detection Instrumentation

Operability of the detection instrumentation ensures that both adequate warning capability is available for the prompt detection of fires and that fire suppression systems, that are actuated by fire detectors, will discharge extinguishing agent in a timely manner. Prompt detection and suppression 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, increasing the frequency of fire watch patrols in the affected area(s), or zone(s), is required to provide detection capability until the inoperable instrumentation is restored to operability.

9.5.1.6.2 Fire Suppression Systems (Water, Spray and/or Sprinklers, Gaseous, and Fire Hose Stations)

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, carbon dioxide systems, halon systems 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 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.

Surveillance
The ~~testing and inspection~~ requirements provide assurances that the minimum operability requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of halon in the halon storage tanks by verifying the weight and pressure of the tanks.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. 3

Surveillance
The ~~testing and inspection~~ requirements for spray and sprinkler systems provide for periodic visual inspections to ensure that temporary structures/objects do not impair the spray patterns which have been established in accordance with the GGNS fire protection design requirements.

9.5.1.6.3 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, fire barrier penetrations for conduits, cable trays and piping, fire windows, fire dampers, and fire doors are periodically inspected to verify their operability.

9.5.2 Communications Systems

9.5.2.1 Design Bases

9.5.2.1.1 Power Generation Design Bases

The following communications systems are provided to maintain adequate communication between the control room and various plant locations:

- a. A public address (PA) system is provided for intra-plant voice communication. An evacuation alarm system is provided as an integral part of the PA system. This system consists of a multitone generator which may be activated to provide a unique audible alarm signal.

TABLE 9.5-12 (Cont.)

Appendix 16A	and surveillance procedures and the requirements listed in Table 9.5-16 under the supervision of personnel properly qualified by experience and training for such work.
Appendix 16A	7. Meets the intent. Surveillance procedures have been established and are performed in accordance with the requirements listed in Table 9.5-16 and the Grand Gulf Operations Manual.
D. Alternative or Dedicated Shutdown Capability	As discussed in the Fire Hazards Analysis Report, suitable fire protection measures have been provided to ensure that a fire in any area of the plant will not affect safe shutdown capability. For a discussion of a fire in the control room, see Section III.L of this table.
III. Specific Requirements	
A. Water Supplies for Fire Suppression Systems	Meets the intent. As described in subsection 9.5.1.2.1, the Grand Gulf fire protection water supply system consists of two 300,000-gallon nominal capacity water storage tanks at atmospheric pressure and three 1500 gpm fire pumps (one electric, two diesel). Each of the three fire pumps has the capability to take suction from either water storage tank. Each tank has the capability of supplying the maximum fire water demand

TABLE 9.5-16
F. PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE NODES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
1. Fire Detection Instrumentation	Instrumentation for each fire detection zone shown in the Fire Protection Plan shall be operable.	Whenever equipment protected by the fire detection instrument is required to be operable.	a. Any of the Function A or Function B fire detection instruments in any fire detection zone inoperable.	a.1. Outside containment a) establish an hourly fire watch patrol in the affected area.	a) Within next 1 hour.	a.1. Each of the fire detection instruments which are accessible during plant operation shall be demonstrated operable at least once per 6 months by performance of a channel functional test.
				a.2. Inside containment, steam tunnel or drywell a) inspect affected containment zone every 8 hours OR b) monitor containment, steam tunnel or drywell exit temperature every hour.	a) Within next 1 hour. b) Within next 1 hour.	a.2. Fire detectors which are not accessible during plant operation shall be demonstrated operable by performance of a channel functional test during each Cold Shutdown exceeding 24 hours unless performed in previous 6 months.
				a.3. Restore to operable status OR Submit a Special Report to the Commission in accordance with the Technical Specifications outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to operable status.	a) Within 14 days b) Within 30 days	b. The NFPA Standard 72D supervised circuits supervision associated with the detector alarms of each of the fire detection instruments shall be demonstrated operable at least once per 6 months.
2. Fire Suppression Water System	a. Two operable fire suppression pumps each with a capacity of 1500 gpm, aligned to the fire suppression header.	At all times.	a.1. One required pump inoperable.	a.1. Restore to operable status OR provide an alternate pump.	a.1. Within 7 days	a.1. Verification of the minimum contained water supply volume at least once per 7 days.
	b. Two separate water supply tanks, each with a minimum contained volume of 210,000 gallons	At all times.	a.2. Two required pumps inoperable. b.1. One tank inoperable.	*a.2. Provide a backup fire suppression water system. b.1. Restore to operable status OR provide an alternate water supply.	a.2. Within 24 hours. b.1. Within 7 days.	a.2. Starting the electric motor-driven fire pumps and operating for at least 15 minutes at least once per 31 days. a.3. Verification that each valve in the flow path is in its correct position at least once per 31 days.

DELETE

TABLE 9.5-16 (Cont.)
FI. PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE MODES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
2. Fire Suppression Water System (Cont.)			b.2. Two tanks inoperable.	*b.2. Provide a backup fire suppression water system.	b.2. Within 24 hours.	a.4. Performance of a system flush at least once per 12 months.
						a.5. Cycling of each testable valve in the flow path through at least one com- plete cycle of full travel at least once per 12 months.
	c. Operable flow path capable of taking suction from both supply tanks and transferring the water through distribution piping with operable sectionalizing control or isolation valves to the yard hydrant curb valves, the last valve ahead of the water flow alarm device on each sprinkler or hose standpipe and the last valve ahead of the deluge valve on each deluge or spray system required to be operable by items 3, 6 and 7 below.	At all times.	c. Flow path inoperable.	*c. Provide a backup fire suppression water system.	c. Within 24 hours.	a.6. Performance of a system func- tional test which includes emulated automatic actuation of the system throughout its operating sequence at least once per 18 months and: a) Verification that each automatic valve is the flow path actuates to its correct position, b) Verification that each fire suppression pump develops at least 1500 gpm at a system head of 275 feet, c) Cycling each valve in the flow path that is not test- able during plant operation through at least one com- plete cycle of full travel, and d) Verification that each fire suppression pump starts sequentially to maintain the fire suppression water system pressure greater than or equal to 120 psig.
						a.7. Performance of a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association at least once per 3 years.
						b.1. Verification that the fuel oil day tank contains at least 300 gallons of fuel at least once per 31 days.
						b.2. Starting the diesel driven pump from ambient conditions and operating for at least 30 minutes at least once per 31 days.

DELETE

TABLE 9.5-16 (Cont.)
F. PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE MODES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
2. Fire Suppression Water System (Cont.)						<p>b.3 Verification that a sample of diesel fuel from the storage tank, obtained in accordance with ASTM-D270-75, is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment at least once per 92 days.</p> <p>b.4 During shutdown, subject the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service at least once per 18 months.</p> <p>c.1 Verification that the electrolyte level of each cell of each battery is above the plates and the overall battery set voltage is at least 24 volts for each fire pump diesel starting 24-volt battery bank and charger at least once per 7 days.</p> <p>c.2 Verification that the specific gravity for each cell is appropriate for continued service of the battery and greater than or equal to 1.20 when corrected to 77°F and full electrolyte level at least once per 92 days.</p> <p>c.3 Verification that the battery case and racks show no visual indications of physical damage or abnormal deterioration and battery terminal connections are clean, tight, free of corrosion and coated with anticorrosion material at least once per 18 months.</p>
3. Spray and/or Sprinkler Systems	Spray and/or sprinkler systems as shown in the Fire Protection Plan shall be operable.	Whenever the equipment being protected is required to be operable.	a. One or more spray and/or sprinkler systems inoperable in areas containing redundant systems or components.	a. Establish a continuous fire watch with backup fire suppression capability in the affected area.	Within 1 hour.	<p>a. Verification that each valve in the flow path is in its correct position at least once per 31 days.</p> <p>b. Cycling each testable valve in the flow path through at least one complete cycle of full travel at least once per 12 months.</p>

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* With the Fire Suppression Water System in this condition, establish a backup Fire Suppression Water System within 24 hours. If this required action can not be met, the requirements of Technical Specification 3.0.3 shall be initiated.

TABLE 9.5-16 (Cont.)
F. PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE CODES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
3. Spray and/or Sprinkler Systems (Cont.)			b. Any other spray and/or sprinkler systems inoperable	b. Establish an hourly fire watch patrol in the affected area.	Within 1 hour.	c.1. Performance of a system functional test at least once per 18 months which includes a simulated automatic actuation of the system and: a) Verification that the automatic valves in the flow path actuate to their correct position 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. c.2. Visual inspection of the dry pipe spray and sprinkler headers at least once per 18 months to verify their integrity. c.3. Visual inspection of each nozzle's spray area to verify the spray pattern is not obstructed at least once per 18 months.
4. CO ₂ Systems	CO ₂ systems as shown in the Fire Protection Plan shall be operable.	Whenever the equipment being protected is required to be operable.	a. One or more CO ₂ systems inoperable in areas containing redundant systems or components. b. Any other CO ₂ systems inoperable.	a. Establish a continuous fire watch with backup fire suppression equipment in the affected area. b. Establish an hourly fire-watch patrol of the area protected.	Within 1 hour. Within 1 hour.	a. Verification that each valve in the flow path is in its correct position at least once per 31 days. For differential pressure selector valves the valves' release lever shall be verified to be in the correct position. b. Verification that the CO ₂ storage tank level is greater than 60% and pressure greater than 275 psig at least once per 7 days. c. Verification that system valves and associated ventilation system fire damper logic actuates automatically or manually, if applicable, upon receipt of a simulated actuation signal (actual CO ₂ release, electrothermal link burning, and differential pressure valve opening may be excluded from this test) at least once per 18 months. d. Verification of flow from each nozzle by performance of a "puff test" at least once per 18 months.

DELETE

TABLE 9.5-16 (Cont.)
F. PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE MODES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
4. CO ₂ Systems (Cont.)						e. Exercising each ventilation system fire damper to the closed position and verifying that the dampers move freely at least once per 18 months.
5. Halon Systems	Halon systems as shown in the Fire Protection Plan shall be operable with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure.	Whenever the equipment being protected is required to be operable.	a. One or more Halon systems inoperable in areas containing redundant systems or components. b. Any other Halon systems inoperable.	a. Establish a continuous fire watch with backup fire suppression capability in the affected area. b. Establish an hourly fire watch patrol in the affected area.	a. Within 1 hour. b. Within 1 hour.	a. Verification that each valve except for hazard area selector valves F497G and F497H, in the flow path is in its correct position at least once per 31 days. b. Verification of Halon storage tank weight and pressure at least once per 6 months. c. At least once per 18 months, verify operability by: 1) Verification that the system, including associated ventilation system fire damper logic, actuates automatically upon receipt of a simulated actuation signal (actual Halon release, Halon bottle initiator valve actuation and electro-thermal link burning may be excluded from the test), and 2) Performance of a flow test through headers and nozzles to assure no blockage, and 3) Exercising each ventilation system fire damper to the closed position and verifying the dampers move freely.
6. Fire Hose Stations	Fire hose stations as shown in the Fire Protection Plan shall be operable.	Whenever the equipment in the area protected by the stations is required to be operable.	One or more fire hose stations inoperable.	Provide equivalent capacity backup hose protection from an operable hose station to the unprotected area.	Within 1 hour if the inoperable station is the primary means of fire protection in the affected area; otherwise, within 24 hours.	a. Visual inspection of the fire hose stations accessible during plant operations to assure all required equipment is at the station at least once per 31 days. b.1 Visual inspection of the fire hose stations not accessible during plant operations to assure all required equipment is at the station at least once per 18 months.

DELETE

TABLE 9.5-16 (Cont.)
FIRE PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE CODES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
6. Fire Hose Stations (Cont.)						<p>b.2. Removal of the hose for inspection and reracking at least once per 18 months.</p> <p>b.3. Inspection of all gaskets and replacing any degraded gaskets in the couplings at least once per 18 months.</p> <p>c.1. Partial opening of each hose station valve to verify valve operability and no flow blockage at least once per 3 years.</p> <p>c.2. Performance of a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater at least once per 3 years.</p>
7. Yard Fire Hydrants and Hydrant Hose Houses	Yard fire hydrants and hydrant hose houses indicated in the Fire Protection Plan shall be operable.	Whenever the equipment in the areas protected by the yard fire hydrants is required to be operable.	One or more yard fire hydrants or associated hydrant hose houses inoperable.	Provide equivalent capacity backup hose protection to the affected area from an adjacent operable hydrant hose house.	Within 24 hours.	<p>a. Visual inspection of the hydrant hose house to assure all required equipment is at the house at least once per 31 days.</p> <p>b. Visual inspection at least once per 6 months during March, April or May and during September, October or November each yard fire hydrant and verify that the hydrant barrel is dry and that the hydrant is not damaged.</p> <p>c. At least once per 12 months:</p> <ol style="list-style-type: none"> 1) Conduct a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure whichever is greater, and 2) Replace all degraded gaskets in couplings, and 3) Perform a flow check of each hydrant.

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BLE 9.5-16 (Cont.)
FIRE PROTECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE MOODS	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
8. Fire Rated Assemblies	All fire rated assemblies separating safety-related fire areas or separating portions of redundant systems important to safe shutdown within a fire area, and all sealing devices in fire rated assembly penetrations shall be operable.	At all times.	One or more inoperable.	<p>a. Establish a continuous fire watch on at least one side of the affected barrier</p> <p>OR</p> <p>b. Verify the operability of fire detectors on at least one side of the inoperable barrier</p> <p>AND</p> <p>establish an hourly fire watch patrol.</p>	<p>a. Within 1 hour</p> <p>b. Within 1 hour.</p>	<p>a.1. Visual inspection of the exposed surfaces of each fire rated assembly at least once per 18 months.</p> <p>a.2. Visual inspection of each fire window/fire damper and associated hardware at least once per 18 months.</p> <p>a.3. Visual inspection of at least 10% of each type electrical and mechanical) of sealed penetration at least once per 18 months. If apparent changes in appearance or abnormal degradations are found, a visual inspection of an additional 10% of each type of sealed penetration shall be made. This inspection process shall continue until a 10% sample with no apparent changes in appearance or abnormal degradation is found. Samples shall be selected such that each penetration seal will be inspected at least once per 15 years.</p> <p>b.1. Inspection of the automatic hold-open, release and closing mechanism and latches of the required fire doors at least once per 6 months.</p> <p>b.2. Performance of a Channel Functional Test of the Fire Door Supervision System for each electrically supervised fire door at least once per 31 days.</p> <p>b.3. Verification that each locked closed fire door is closed at least once per 7 days.</p> <p>b.4. Verification that doors with automatic hold-open release mechanisms are free of obstructions at least once per 24 hours.</p>

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ABLE 9.5-16 (Cont.)
FIA SECTION SYSTEM REQUIREMENTS

SYSTEM	REQUIREMENT	APPLICABLE MOVES	CONDITION	REQUIRED ACTION	TIME REQUIREMENT	TESTING/INSPECTION REQUIREMENT
8. Fire Rated Assemblies (Cont.)						<p>b. 5. For doors with automatic hold-open and release mechanism, performance of a functional test of the mechanism at least once per 18 months.</p> <p>b. 6. Verification that each unlocked fire door without electrical supervision is closed at least once per 24 hours.</p>

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APPENDIX 9A

FIRE HAZARDS ANALYSIS REPORT

The GGNS Fire Hazards Analysis Report is maintained as a separate controlled document. The latest Revision of the Fire Hazards Analysis Report was submitted to the NRC on May 5, 1989, 1 | 2 | 3 | 4 (AECM-89/0090..)

Considered part of the Fire Protection Program described in Appendix 9B and as such is subject to the provisions of GGNS Operating License Condition 2.C. (41). The Fire Hazards Analysis Report is

APPENDIX 9B

FIRE PROTECTION PROGRAM

9B.1 SCOPE AND APPLICABILITY

Insert →

The purpose of the Fire Protection Program is to extend the concept of defense-in-depth to fire protection in fire areas important to safety with the following objectives:

- o To prevent fires from starting
- o To detect rapidly, control, and extinguish promptly those fires that do occur
- o To provide protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by fire suppression activities will not compromise the ability to achieve the safe shutdown of the plant

The Fire Protection Program also delineates the responsibilities and the methods to be used to accomplish the objectives stated above. This Fire Protection Program will interface with other GGNS manuals, plans, and procedures to provide an effective and coordinated Fire Protection Program that encompasses all phases of operation, administration, maintenance, and emergency activities. These interfaces will, as a minimum, include the Emergency Plan and implementing document, the Security Plan and security instructions, plant administrative procedures, operating and emergency operating instructions, the surveillance programs, and the quality assurance program and training program.

9B.2 ORGANIZATIONS AND RESPONSIBILITIES

The personnel and/or organizations responsible for the formulation, implementation, and assessment of the effectiveness of the GGNS Fire Protection Program are detailed in the following sections and shown on Figure 13.1-2 and Figure 9B-1.

9B.2.1 Offsite Organizations and Responsibilities

9B.2.1.1 Corporate Management

The Vice President, Nuclear Operations, has the overall responsibility for the formulation, implementation, and assessment of the effectiveness of the GGNS Fire Protection Program.

Insert to 9B.1

GGNS has incorporated the Fire Protection Program into the UFSAR. The GGNS Fire Protection Program is described in the following sections of the UFSAR:

<u>UFSAR</u>	<u>Fire Protection Program Elements</u>
7.4.1	Alternate Shutdown System
9.5.1	Fire Protection System
Appendix 9A	Fire Hazards Analysis Report
Appendix 9B	Fire Protection Program
Appendix 9C	Analysis of Safe Shutdown
Table 9.5-11	Comparison with NRC Branch Technical Position APCS 9.5-1, Appendix A
Table 9.5-12	Comparison with Appendix R to 10CFR Part 50
Figures 9.5-1 to 9.5-8e, inclusive	Fire Protection Systems
Appendix 16A	Fire Protection System Technical Specifications

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This fire protection rule does not apply to the Grand Gulf Nuclear Station; however, as a result of a meeting held with the NRC staff on June 30, 1981 and at the NRC staff's request, a comparison of the Grand Gulf Nuclear Station Fire Protection Program to the requirements outlined by 10 CFR 50, Appendix R, Sections II and III, was performed. The results of this comparison are presented in Table 9.5-12.

9B.5 PROGRAM IMPLEMENTATION

The fire protection program for GGNS is fully operational.

Plant administrative procedures describe the details and provide for additional instructions to implement the requirements of the Fire Protection Program stated herein. ~~An administrative procedure entitled "Fire Protection Plan" details the system requirements, mode applicability, limiting conditions, remedial actions and surveillance requirements. Changes to the "Fire Protection Plan" procedure shall be evaluated to determine if an unreviewed safety question as defined in 10CFR50.59 is involved.~~

Responsibilities of those persons or organizations needed to implement the Fire Protection Program are provided in Section 9B.2.

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- g. Provide for periodic housekeeping inspections to ensure continued compliance with administrative controls.
- h. Control the use of specific combustibles in safety-related areas. All wood (such as lay-down blocks or scaffolding) used in safety-related areas during maintenance, modification, or refueling operations shall be treated with a flame retardant, unless specifically authorized and technically justified by the station fire chief. Equipment or supplies (such as new fuel) shipped in untreated combustible packing or containers may be unpacked in safety-related areas if required for valid operating reasons. However, all combustible materials shall be removed from the area immediately following the unpacking.
- i. Delineate the actions to be taken by the individual discovering a fire.
- j. Delineate the actions to be taken by the control room operator to determine the need for brigade assistance upon the report of a fire or receipt of a fire alarm in the control room.
- k. Describe the actions to be taken by the fire brigade after notification by the control room operator of a fire.
- l. Describe the fire fighting strategies for fighting fires in all safety-related areas and areas presenting a hazard to safety-related equipment.
- m. Govern leak testing such that open flames or combustion-generated smoke shall not be permitted.
- n. Provide for the disarming of fire detection or fire suppression systems and delineate the requirements for fire protection during periods when the fire protection system is impaired.
- o. Provide for the testing and maintenance of the fire protection systems and equipment.
- p. Govern the operability requirements, required actions, and testing/inspection requirements specified in ~~Table 9.5-10~~.

Appendix 16A

9B.10 QUALITY ASSURANCE

The GGNS fire protection system goes through two major phases from design to operational status. These phases are: (1) design, procurement, and construction; and (2) startup testing and operation. Appropriate quality assurance programs and requirements are applied to the fire protection system during each phase.

The QA program applied to each phase addresses the 10-point QA criteria presented in Section C of Appendix A to Branch Technical Position APCSB 9.5-1. Furthermore, in each phase, the QA activities are under the management control of the appropriate QA organization. Management control, as used here, is defined as the authority and responsibility for establishing, controlling, and verifying the implementation and adequacy of the fire protection QA program.

During the design, procurement, and construction phases of the fire protection system, the fire protection QA program is under the management control of the Bechtel Grand Gulf QA organization. This program has been developed to ensure that the GGNS design is of sufficient quality to meet its design function.

Table 9.5-11, Section C, has been revised to provide the QA program scope and description. During this phase, the SERI Director, Quality Programs has the responsibility for verifying the implementation and adequacy of the Bechtel fire protection QA program chiefly through a documented audit program. | 2

During the operational phase (startup, preoperational testing, and operations), the fire protection QA program is under the management control of the SERI QP organization. The specific organizations which exercise this control are: Quality Programs Nuclear Plant Engineering, Performance and System Engineering, Maintenance, and Operations. Section C of Table 9.5-11 provides the scope and description of the QA Fire Protection Program applicable during the startup and operational phases. | 2 | 3 | 4

9B.11 SYSTEMS

Section 7.4.1.5 of the UFSAR describes the Alternate Shutdown System which may be utilized in case of a Control Room exposure fire.

Section 9.5.1 of the UFSAR describes the Fire Protection System. →

9B.12 FIRE HAZARDS ANALYSIS

The Fire Hazards Analysis is referenced by Appendix 9A to the UFSAR. 1

9B.13 ANALYSIS OF SAFE SHUTDOWN IN THE EVENT OF A MAJOR FIRE

An analysis of safe shutdown in the event of a major fire is discussed in Appendix 9C.

16.0 TECHNICAL SPECIFICATIONS

See Appendix A to the operating license for ~~Grand Gulf Nuclear Station~~.

Technical Specifications

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The technical specifications contained in Appendix 16A have been relocated from the Grand Gulf Nuclear Station (GGNS) Unit 1 Operating License in accordance with Generic Letter 88-12.

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UNIT 1

APPENDIX 16A

FIRE PROTECTION SYSTEM TECHNICAL SPECIFICATIONS

Appendix 16A contains the technical specifications relocated from the GGNS Unit 1 Technical Specifications (Appendix A to the GGNS Unit 1 Operating License) in accordance with Generic Letter 88-12. Appendix 16A references, in some cases, other technical specifications still contained in the GGNS Unit 1 Technical Specifications. Section 1.0, "DEFINITIONS", and Section 3/4.0, "APPLICABILITY", of Appendix A apply to the relocated technical specifications.

APPENDIX 16A
FIRE PROTECTION SYSTEM TECHNICAL SPECIFICATIONS

INSTRUMENTATION

FIRE DETECTION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.7.9 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3.7.9-1 shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection instrument is required to be OPERABLE.

ACTION:

With the number of OPERABLE Function A or Function B fire detection instruments less than the Minimum Instruments OPERABLE requirement of Table 3.3.7.9-1:

- a. Within 1 hour, establish a fire watch patrol to inspect the zone(s) with the Function A or room(s) with Function B inoperable instrument(s) at least once per hour, unless the instrument(s) is located inside the containment, steam tunnel or drywell, then inspect the primary containment at least once per 8 hours or monitor the containment, steam tunnel and/or drywell air temperature at least once per hour at the locations listed in Specification 3.7.8, 4.6.1.8 and 4.6.2.6.
- b. Restore the minimum number of instruments to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.
- c. The provisions of Specifications ~~3.0.3 and 3.0.4~~⁹ are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.9.1 Each of the above required fire detection instruments which are accessible during unit 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 unit 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.

4.3.7.9.2 The NFPA Standard 72D supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

TABLE 3.3.7.9-1
FIRE DETECTION INSTRUMENTATION

<u>INSTRUMENT LOCATION</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
	<u>HEAT</u> <u>(X/Y)</u>	<u>FLAME</u> ⁽¹⁾ <u>(X/Y)</u>	<u>SMOKE</u> ⁽¹⁾ <u>(X/Y)</u>
<u>a. CONTAINMENT BUILDING #</u>			
1. Return Duct Mounted Detectors			3/0
<u>ROOM</u> <u>ELEV</u> <u>ROOM NAME</u>			
<u>b. CONTROL BUILDING</u>			
1. Zone 1-3			12/0
OC103 93'			Emergency Laundry Rm.
OC109 93'			Decontamination Area
OC115 93'			Corridor
OC116 93'			Hot Machine Shop
OC117 93'			Corridor
OC128 93'			Hot Water Heater Rm.
2. Zone 1-4			12/0
OC201 111'			Stairwell
OC202 111'			Div. I Swgr. Rm.
OC207 111'		0/13(CO ₂)	Div. I Battery Rm.

- * (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.

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

(1) Smoke and flame detectors provide only early warning capability with the exception of:

- (a) Zone 1-27 detectors trip closed the door between the OC208/OC208A Remote Shutdown panel rooms.
- (b) Containment building return duct mounted detectors trip the containment cooler fans.
- (c) Zone 1-11 and 1-13 detectors initiate the control building purge fan system.
- (d) Control Room HVAC Intake Plenum Detectors trip the control room A/C units unless a control room emergency filtration system isolation mode automatic actuation signal is present.

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

	<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
				<u>HEAT</u> (X/Y)	<u>FLAME</u> ⁽¹⁾ (X/Y)	<u>SMOKE</u> ⁽¹⁾ (X/Y)
3.	Zone 1-5					3/0
	OC209	111'	Div. III Battery Rm.			
	OC210	111'	Div. III Swgr. Rm.	0/4(CO ₂)		
4.	Zone 1-6					10/0
	OC211	111'	Div. II Battery Rm.			
	OC215	111'	Div. II Swgr. Rm.	0/7(CO ₂)		
	OC216	111'	West Corridor			
5.	Zone 1-07					5/0
	OC212	111'	U-2 Div. I Battery Rm.			
	OC214	111'	U-2 Div. I Swgr. Rm.			
6.	Zone 1-08					5/0
	OC203	111'	U-2 Div. II Swgr. Rm.			
	OC206	111'	U-2 Div II Battery Rm.			
7.	Zone 1-10					2/0
	OC306	133'	Electrical Chase			
	OC307	133'	Electrical Chase			
8.	Zone 1-11					13/0
	OC302	133'	HVAC Equipment Rm.			
	OC308	133'	Corridor			
9.	Zone 1-12					2/0
	OC304	133'	Electrical Space			
	OC305	133'	Electrical Space			
	OC412	133'	Electrical Space			
10.	Zone 1-13					16/0
	OC303	133'	HVAC Equipment Rm.			
11.	Zone 1-14					9/0
	OC402A	148'	HVAC Chase			
	OC403	148'	Computer Room	0/12(Halon)		
	OC410	148'	Battery Room			
12.	Zone 1-15					15/0
	OC401	148'	Corridor			
	OC402	148'	Lower Cable Spreading Room	0/9(CO ₂)		
	OC407	148'	Instr. Motor Gen. Rm.	0/2(CO ₂)		
	OC408	148'	Corridor			
	OC409	148'	Electrical Chase			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> <u>(X/Y)</u>	<u>FLAME</u> ⁽¹⁾ <u>(X/Y)</u>	<u>SMOKE</u> ⁽¹⁾ <u>(X/Y)</u>
13. Zone 1-16					13/0
OC405	148'	U-2 Lower Cable Spreading Room			
OC412	148'	U-2 Electrical Space			
14. Zone 1-18					31/0
OC502	166'	U-2 Instr. Rack Area			
OC503	166'	Control Room			
OC504	166'	U-1 Instr. Rack Area			
OC516	166'	Electrical Space			
OC517	166'	Electrical Space			
15. Zone 1-19					9/0
OC507	166'	Aux. Instrument Shop			
OC509	166'	Corridor			
OC510	166'	Office			
OC511	166'	Dining Area			
OC512	166'	Kitchen			
OC514	166'	Locker Room			
OC515	166'	Corridor			
16. Zone 1-20					1/0
OC708A	189'	HVAC Chase			
17. Zone 1-21					2/0
OC518	166'	Electrical Chase			
OC611	177'	Electrical Chase			
18. Zone 1-22					16/0
OC601	177'	Viewing Gallery			
OC602	177'	Corridor No. 1			
OC603	177'	Emergency Dormitory			
OC604	177'	Computer Room			
OC605	177'	Janitor's Closet			
OC608	177'	Technical Support			
OC608B	177'	HVAC Chase			
OC613	177'	Corridor			
OC614	177'	Corridor			
OC616	177'	Storage Closet			
OC617	177'	Electrical Chase			
OC618	177'	Electrical Chase			
OC619	177'	Electrical Chase			
OC03	177'	Stair			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

	ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
				HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
19.	Zone 1-23					21/0
	OC702	189'	Upper Cable Spreading Room	0/12(CO ₂)		
	OC706	189'	West Corridor			
	OC707	189'	Instr. Motor Gen. Rm.			
	OC709	189'	Electrical Chase			
	OC711	189'	Passage			
	OC712	189'	HVAC Room			
20.	Zone 1-24					6/C
	OC703	189'	Control Cabinet Area	4/0 (CO ₂)		
21.	Zone 1-26					16/0
	OC705	189'	U-2 Upper Cable Spreading Room			
	OC708	189'	U-2 Instr. Motor Gen. Rm.			
22.	Zone 1-27					2/0
	OC208	111'	Div. II Remote Shutdown Panel	0/1(CO ₂)		
	OC208A	111'	Div. I Remote Shutdown Panel	0/1(CO ₂)		
23.	Control Room HVAC Intake Plenum Mounted Detectors					2/0
c.	<u>AUXILIARY BUILDING</u>					
1.	Zone 2-2					28/0
	1A211	119'	North Corridor (Partial)			
	1A215	119'	South Corridor (Partial)			
	1A222	119'	West Corridor			
2.	Zone 2-3					5/0
	1A219	119'	Electrical Supr. Rm.	0/2(CO ₂)		
	1A220	119'	Piping Penetration Room			
	1A221	119'	Electrical Supr. Rm.	0/2(CO ₂)		
3.	Zone 2-4					22/0
	1A102	93'	RHR "A" Heat Ex. Rm.			
	1A103	93'	RHR "A" Pump Rm.			
	1A104	93'	RCIC Pump Rm.			
	1A105	93'	RHR "B" Pump Rm.			
	1A106	93'	RHR "B" Heat Ex. Rm.			
	1A128	108'	RHR "A" Heat Ex. Rm.			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

ROOM	ELEV	ROOM NAME	MINIMUM INSTRUMENTS OPERABLE*		
			HEAT (X/Y)	FLAME ⁽¹⁾ (X/Y)	SMOKE ⁽¹⁾ (X/Y)
3. Zone 2-4 (Continued)					
1A129	108'	RHR "B" Heat Ex. Rm.			
1A202	119'	RHR "A" Heat Ex. Rm.			
1A203	119'	Piping Penetration Rm.			
1A204	119'	Piping Penetration Rm.			
1A205	119'	Piping Penetration Rm.			
1A206	119'	RHR "B" Heat Ex. Rm.			
1A207	119'	Electrical Swgr. Rm.	0/3(CO ₂)		
1A208	119'	Electrical Swgr. Rm.	0/3(CO ₂)		
1A209	115'	RWCU Recirc Pump "A" Rm.			
1A210	115'	RWCU Recirc Pump "B" Rm.			
1A223	128'	Passage			
4. Zone 2-5					5/0
1A318	139'	Electrical Penetration Room	0/2(CO ₂)		
1A319	139'	RPV Instr. Test Rm.			
1A320	139'	Electrical Penetration Room	0/2(CO ₂)		
5. Zone 2-6					27/0
1A301	139'	East Corridor			
1A302	139'	Southeast Corridor			
1A303	139'	RHR "A" Heat Ex. Rm.			
1A304	139'	Piping Penetration Rm.			
1A306	139'	Piping Penetration Rm.			
1A307	139'	RHR "B" Heat Ex. Rm.			
1A308	139'	Electrical Penetration Room	0/3(CO ₂)		
1A309	139'	Electrical Penetration Room	0/3(CO ₂)		
1A314	139'	South Corridor (Partial)			
1A316	139'	North Corridor (Partial)			
6. Zone 2-7					18/0
1A417	166'	North Corridor (Partial)			
1A420	166'	South Corridor (Partial)			
1A424	166'	Set Down Area (Partial)			
1A428	166'	West Corridor			
1A430	166'	CRD Repair Rm.			
1A432	166'	FPC & CU Pump Rm.			
1A434	166'	South Passage			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> <u>(X/Y)</u>	<u>FLAME</u> <u>(X/Y)</u> ⁽¹⁾	<u>SMOKE</u> <u>(X/Y)</u> ⁽¹⁾
7. Zone 2-8					27/0
1A401	166'	Northeast Corridor			
1A402	166'	Steam Tunnel Roof			
1A403	166'	Southeast Corridor			
1A404	166'	Unassigned Area			
1A405	166'	Containment Vent. Equip. Room			
1A406	166'	Containment Exhaust Filter Rm.			
1A407	166'	MCC Area	0/2(CO ₂)		
1A410	166'	MCC Area	0/2(CO ₂)		
1A417	166'	North Corridor (Partial)			
1A420	166'	South Corridor (Partial)			
1A424	166'	Set Down Area (Partial)			
8. Zone 2-9					10/0
1A519	185'	Storage Area			
1A524	195'	Platform			
1A527	185'	Load Center Area			
1A529	185'	FPC & CU Rm.			
1A538	185'	Platform			
9. Zone 2-13					31/0
1A602	208'	Storage Area			
1A603	208'	Passage			
1A604	208'	Fuel Handling Area			
1A606	245'	HVAC Equip. Area			
10. Zone 2-14					17/0
1A114	93'	Far Coil Area (Partial)			
1A115	93'	Piping Penetration Rm.			
1A116	93'	Piping Penetration Rm.			
1A117	93'	Misc. Equip. Area (Partial)			
1A118	93'	RHR "C" Pump Room			
1A119	93'	LPCS Pump Room			
1A120	93'	CCW Pump & Heat Ex. Rm.			
1A122	103'	South Corridor (Partial)			
1A123	103'	North Corridor (Partial)			
11. Zone 2-15					1/0
1A539	185'	Cable Chase			

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> (X/Y)	<u>FLAME</u> ⁽¹⁾ (X/Y)	<u>SMOKE</u> ⁽¹⁾ (X/Y)
12. Zone 2-17					18/0
1A101	93'	Passage			
1A109	93'	HPCS Pump Rm.			
1A111	93'	Piping Penetration Rm.			
1A114	93'	Fan Coil Area (Partial)			
1A117	93'	Misc. Equip. Area (Partial)			
1A121	103'	East Corridor			
1A122	103'	South Corridor (Partial)			
1A123	103'	North Corridor (Partial)			
13. Zone 2-18					20/0
1A201	119'	East Corridor			
1A211	119'	North Corridor (Partial)			
1A215	119'	South Corridor (Partial)			
14. Zone 2-19					15/0
1A314	139'	South Corridor (Partial)			
1A316	139'	North Corridor (Partial)			
1A321	139'	MCC Area			
1A322	139'	Centrifugal Chiller Area			
1A323	139'	SGTS Area			
1A324	139'	HVAC Equip. Area			
1A326	139'	SGTS Area			
15. Zone 2-20					2/0
1A305	139'	Steam Tunnel			
16. Zone 2-21					4/0
1A12	185'	Stairwell			
1A12	208'	Stairwell			
1A12	245'	Stairwell			

d. DIESEL GENERATOR BUILDING

1. Zone 2-10				9/0
1D301	133'	Corridor	0/3 (Deluge)	
1D304	133'	Day Tank Area		
1D306	133'	Div. III Diesel Gen. Room		
1D401	158'	Div. III Diesel Gen. Room	0/7 (Deluge)	
2. 2-11				6/0
1D303	133'	Day Tank Area		
1D308	133'	Div. II Diesel Gen. Room		
1D402	158'	Div. II Diesel Gen. Room	0/7 (Deluge)	

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> <u>(X/Y)</u>	<u>FLAME</u> ⁽¹⁾ <u>(X/Y)</u>	<u>SMOKE</u> ⁽²⁾ <u>(X/Y)</u>
3. Zone 2-12				6/0	
1D302	133'	Day Tank Area			
1D310	133'	Div. 1 Diesel Gen. Room			
1D403	158'	Div. 1 Diesel Gen. Room	0/7 (Deluge)		
e. <u>STANDBY SERVICE WATER PUMP HOUSE</u>					
1. Zone 2-1					4/0
1M110	133'	SSW Pump Rm. A			
1M112	133'	SSW Valve Rm. A			
2M110	133'	SSW Pump Rm. B			
2M112	133'	SSW Valve Rm. B			
f. <u>CHARCOAL FILTER TRAINS</u>					
1. Standby Gas Treatment System Filter Trains A & B				2/0 (Allison Thermistor Wire)	
Auxiliary Building El. 139'					
2. Control Room Standby Fresh Air System Filter Trains A & B				2/0 (Allison Thermistor Wire)	
Control Building El. 133'					
g. <u>CONTROL BUILDING (PGCC HALON SYSTEMS)</u>					
OC503	166'	Control Room (Unit 1 side)			
		Module/Halon Panel			
		1H13-U700/1H13-P900	0/10		10/0
		1H13-U701/1H13-P901	0/10		15/0
		1H13-U702/1H13-P902	0/9		14/0
		1H13-U703/1H13-P903	0/11		17/0
		1H13-U720/1H13-P920	0/7		13/0
		SH13-U730/SH13-P930	0/11		12/0
		1H13-U738/1H13-P938	0/10		12/0
		SH13-U739/SH13-P939	0/5		14/0

TABLE 3.3.7.9-1 (Continued)
FIRE DETECTION INSTRUMENTATION

<u>ROOM</u>	<u>ELEV</u>	<u>ROOM NAME</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
			<u>HEAT</u> <u>(X/Y)</u>	<u>FLAME</u> ⁽¹⁾ <u>(X/Y)</u>	<u>SMOKE</u> ⁽¹⁾ <u>(X/Y)</u>
OC504	166'	Unit 1 Instrument Rack Area			
		Module/Halon Panel			
		1H13-U710/1H13-P910	0/8		15/0
		1H13-U711/1H13-P911	0/8		14/0
		1H13-U712/1H13-P912	0/8		9/0
		1H13-U714/1H13-P914	0/8		13/0
		1H13-U732/1H13-P932	0/8		14/0
		1H13-U733/1H13-P933	0/8		13/0
		1H13-U734/1H13-P934	0/8		13/0
		1H13-U735/1H13-P935	0/8		11/0
OC703	189'	Unit 1 Instrument Rack Area			
		Module/Halon Panel			
		1H13-U713/1H13-P913	0/9		15/0
		1H13-U715/1H13-P915	0/8		10/0
		1H13-U717/1H13-P917	0/8		15/0
		1H13-U736/1H13-P936	0/8		14/0
		1H13-U737/1H13-P937	0/8		10/0

PLANT SYSTEMS

3/4.7.6 FIRE SUPPRESSION SYSTEMS

FIRE SUPPRESSION WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 The fire suppression water system shall be OPERABLE with:

- a. At least two OPERABLE fire suppression fire pumps, each with a capacity of 1500 gpm, with their discharge aligned to the fire suppression header,
- b. Separate fire water storage tanks, each with a minimum contained volume of 210,000 gallons, and
- c. An OPERABLE flow path capable of taking suction from the "A" fire water storage tank and the "B" fire water storage tank and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves, the last valve ahead of the water flow alarm device on each sprinkler or hose standpipe and the last valve ahead of the deluge valve on each deluge or spray system required to be OPERABLE per Specifications 3.7.6.2, 3.7.6.5, and 3.7.6.6.

APPLICABILITY: At all times.

ACTION:

- a. With one of the above required fire pumps and/or one fire water storage tank inoperable, restore the inoperable equipment to OPERABLE status within 7 days or provide an alternate backup pump or supply. The provisions of Specifications ~~3.0.3 and 3.0.4~~ are not applicable.
- b. With the fire suppression water system otherwise inoperable, establish a backup fire suppression water system within 24 hours.

SURVEILLANCE REQUIREMENTS

4.7.6.1.1 The fire suppression water system shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying the minimum contained water supply volume.
- b. At least once per 31 days by starting the electric motor driven fire suppression pump and operating it for at least 15 minutes.
- c. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path is in its correct position.
- d. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 12 months by performance of a system flush.
 - 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 fire suppression pump develops at least 1500 gpm at a system head of 275 feet,
 - 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 fire suppression pump starts sequentially to maintain the fire suppression water system pressure greater than or equal to 120 psig.
 - g. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.
- 4.7.6.1.2 The diesel driven fire suppression pump shall be demonstrated OPERABLE:
- a. At least once per 31 days by:
 - 1. Verifying the fuel storage tank contains at least 300 gallons of fuel.
 - 2. Starting the diesel driven pump from ambient conditions and operating for greater than or equal to 30 minutes.
 - b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-75, is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.
 - c. At least once per 18 months, during shutdown, by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.6.1.3 The diesel driven fire pump starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each cell in each battery is above the plates, and
 2. The overall battery set voltage is greater than or equal to 24 volts.
- b. At least once per 92 days by verifying that the specific gravity for each cell is appropriate for continued service of the battery. The specific gravity, corrected to 77°F and full electrolyte level, shall be greater than or equal to 1.20.
- c. At least once per 18 months by verifying that:
 1. The battery case and battery racks show no visual indication of physical damage or abnormal deterioration, and
 2. Battery terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.6.1.3 The diesel driven fire pump starting 24-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each cell in each battery is above the plates, and
 2. The overall battery set voltage is greater than or equal to 24 volts.
- b. At least once per 92 days by verifying that the specific gravity for each cell is appropriate for continued service of the battery. The specific gravity, corrected to 77°F and full electrolyte level, shall be greater than or equal to 1.20.
- c. At least once per 18 months by verifying that:
 1. The battery case and battery racks show no visual indication of physical damage or abnormal deterioration, and
 2. Battery 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

3.7.6.2 The following spray/sprinkler systems shall be OPERABLE:

a. Diesel Generator Building

- | | |
|---|------------|
| 1. Diesel Generator A pre-action sprinkler system | N1P64D142A |
| 2. Diesel Generator B pre-action sprinkler system | N1P64D142B |
| 3. Diesel Generator C pre-action sprinkler system | N1P64D142C |

b. Auxiliary Building*

- | | |
|--|-----------|
| 1. Elevation 93'/103' Northeast Corridor | N1P64D150 |
| 2. Elevation 119' Northeast Corridor | N1P64D151 |
| 3. Elevation 139' Northeast Corridor | N1P64D152 |
| 4. Elevation 166' Northeast Corridor | N1P64D153 |
| 5. Elevation 119' West Corridor | N1P64D158 |
| 6. Elevation 139' West Corridor | N1P64D159 |
| 7. Elevation 166' Northwest Corridor | N1P64D162 |

c. Control Building*

- | | |
|------------------------------------|-----------|
| 1. Elevation 148' Lower Cable Room | N1P64D154 |
| 2. Elevation 189' Upper Cable Room | N1P64D155 |
| 3. Elevation 93' | N1P64D140 |

d. Fire Pump House*

N1P64D136A/B

APPLICABILITY: Whenever equipment protected by the spray/sprinkler systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required spray and/or sprinkler systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. The provisions of Specification 3.0.3 and ~~3.0.4~~ are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.2 The above required spray and sprinkler systems shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path is in its correct position.

*Wet pipe sprinkler system.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS Continued)

- b. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.
- c. 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 a visual inspection of the dry pipe spray and sprinkler headers to verify their integrity, and
 - 3. By a visual inspection of each nozzle's spray area to verify that the spray pattern is not obstructed.

PLANT SYSTEMS

CO₂ SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.6.3 The following low pressure CO₂ systems shall be OPERABLE:

<u>Area</u>	<u>Location</u>	<u>System Number</u>
Electrical Penetration Room	Auxiliary Bldg. E1. 139'0"	N1P64D201A, B, C, D
Electrical Penetration Room	Auxiliary Bldg. E1. 119'0"	N1P64D200A, B, C, D
Control Cabinet Room	Control Bldg. E1. 189'0"	N1P64D216
Division I Switchgear Room	Control Bldg. E1. 111'0"	N1P64D207
Division III Switchgear Room	Control Bldg. E1. 111'0"	N1P64D209
Division II Switchgear Room	Control Bldg. E1. 111'0"	N1P64D208
Emergency Shutdown Panel Rm	Control Bldg. E1. 111'0"	N1P64D212
Motor Generator Room	Control Bldg. E1. 148'0"	N1P64D214B
Electrical Switchgear Room	Auxiliary Bldg. E1. 166'0"	N1P64D217A, B
Lower Cable Spreading Room	Control Bldg. E1. 148'0"	N1P64D213
Upper Cable Spreading Room	Control Bldg. E1. 189'0"	N1P64D215

APPLICABILITY: Whenever equipment protected by the CO₂ systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required CO₂ systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. The provisions of Specification 3.0.3 ~~and 3.0.4~~ are not applicable.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.7.6.3.1 Each of the above required CO₂ systems shall be demonstrated OPERABLE at least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path is in its correct position. Position verification of differential pressure selector valves is not required, however, the valves' release levers shall be verified to be in the correct position.

4.7.6.3.2 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 60% and pressure to be greater than 275 psig, and
- b. At least once per 18 months by:
 1. Verifying that the system valves and associated ventilation system fire damper logic actuates automatically or manually, if applicable, upon receipt of a simulated actuation signal (actual CO₂ release, electrothermal link burning, and differential pressure valve opening may be excluded from this test), and
 2. Flow from each nozzle by performance of a "Puff Test", and
 3. Exercising each ventilation system fire damper to the closed position and verifying the dampers move freely.

PLANT SYSTEMS

HALON SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.6.4 The following Halon systems shall be OPERABLE with the storage tanks having at least 95% of full charge weight and 90% of full charge pressure:

- a. Control Building, elev. 148'0", Computer and Control Panel Room
- b. Control Building, elev. 166'0", PGCC Under Floor Area
- c. Control Cabinet Room, elev. 189'0", PGCC Under Floor Area

APPLICABILITY: Whenever equipment protected by the Halon systems is required to be OPERABLE.

ACTION:

- a. With one or more of the above required Halon systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged; for other areas, establish an hourly fire watch patrol.
- b. The provisions of Specifications 3.0.3 ~~and 3.0.4~~ are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.4 Each of the above required Halon systems shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, except for hazard area selector valves F497G and F497H, in the flow path is in its correct position.
- b. At least once per 6 months by verifying Halon storage tank weight and pressure.
- c. At least once per 18 months by:
 1. Verifying that the system, including associated ventilation system fire damper logic, actuates automatically upon receipt of a simulated actuation signal (Actual Halon release, Halon bottle initiator valve actuation, and electro-thermal link burning may be excluded from the test), and
 2. Performance of a flow test through headers and nozzles to assure no blockage, and
 3. Exercising each ventilation system fire damper to the closed position and verifying the dampers move freely.

PLANT SYSTEMS

FIRE HOSE STATIONS

LIMITING CONDITION FOR OPERATION

3.7.6.5 The fire hose stations shown in Table 3.7.6.5-1 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 3.7.6.5-1 inoperable, route an additional fire hose of equal or greater diameter to the unprotected area(s) from an OPERABLE hose station within 1 hour if the inoperable fire hose is the primary means of fire suppression; otherwise, route the additional hose within 24 hours.
- b. The provisions of Specification/ 3.0.3 ~~and 3.0.4~~ are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.5 Each of the fire hose stations shown in Table 3.7.6.5-1 shall be demonstrated OPERABLE:

- a. At least once per 31 days by a visual inspection of the fire hose stations accessible during plant operation to assure all required equipment is at the station.
- b. At least once per 18 months by:
 1. Visual inspection of the fire hose stations not accessible during plant operation to assure all required equipment is at the station.
 2. Removing the hose for inspection and re-racking, and
 3. Inspecting all gaskets and replacing any degraded gaskets in the couplings.
- c. At least once per 3 years by:
 1. Partially opening each hose station valve to verify valve OPERABILITY and no flow blockage.
 2. Conducting a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater.

TABLE 3.7.6.5-1
FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK IDENTIFICATION</u>
<u>AUXILIARY BUILDING</u>		
Q.1-6.0	103'-0"	13A
Q-5.7	119'-0"	13B
Q.1-6.1	139'-0"	13C
Q-6.0	166'-0"	13D
Q-5.9	185'-0"	13E
Q-6.0	208'-0"	13F
Q-5.8	245'-0"	13G
Q-11.3	93'-0"	14A
P.4-9.0	119'-0"	14B
P.4-9.0	139'-0"	14C
P.4-8.6	166'-0"	14D
P.4-9.5	185'-0"	14E
P-10	208'-10"	14F
P.4-12.5	139'-0"	15A
P.4-12.5	166'-0"	15B
P.4-13.1	185'-0"	15C
R-13.7	208'-10"	15D
M.2-15.1	103'-0"	16A
M.7-15.1	119'-0"	16B
L.7-15.1	139'-0"	16C
L.7-15.1	166'-0"	16D
L.7-15.1	185'-0"	16E
M.7-15.1	208'-10"	16F
H.3-13.8	103'-0"	17A
J.4-13.8	119'-0"	17B
H-13.8	139'-0"	17C
J-13.8	166'-0"	17D
G.4-11	103'-0"	18A
G.4-11.7	119'-0"	18B
G.4-12.2	139'-0"	18C
G.4-11.3	166'-0"	18D
G.4-7.5	103'-0"	19A
G.4-8.3	119'-0"	19B
G.4-7.5	139'-0"	19C
G.4-8.4	166'-0"	19D
G.6-6.4	103'-0"	20A
G.6-6.4	119'-0"	20B
H-6.2	139'-0"	20C
H-6.2	166'-0"	20D
L-6.2	103'-0"	21A
L-6.2	119'-0"	21B
L-6.2	139'-0"	21C
L-6.2	166'-0"	21D

TABLE 3.7.6.5-1 (Continued)

FIRE HOSE STATIONS

<u>LOCATION</u>	<u>ELEVATION</u>	<u>HOSE RACK IDENTIFICATION</u>
<u>CONTAINMENT</u>		
M.7-7.8	120'-10"	22A
H.8-8.1	135'-4"	23A
J.1-8.1	161'-10"	23B
J.8-7.2	184'-6"	23C
J.4-7.5	208'-10"	23D
M.2-7.2	135'-4"	24A
M.8-7.9	161'-10"	24B
M.2-7.2	184'-6"	24C
N-8.2	208'-10"	24D
M.6-12.4	135'-4"	25A
N.2-11.5	161'-10"	25B
N.3-11.3	208'-10"	25C
J.1-12.0	135'-4"	26A
J-11.6	161'-10"	26B
K.2-13.1	184'-6"	26C
J-11.8	208'-10"	26D
<u>CONTROL BUILDING</u>		
J.9-18.8	133'-0"	53A
K.2-18.8	111'-0"	53B
K.1-18.8	93'-0"	53C
G.1-18.4	93'-0"	54A
G.1-18.4	111'-0"	54B
G.2-18.4	133'-0"	54C
G.1-18.7	148'-0"	54D
G.2-18.8	166'-0"	54E
G.1-18.7	189'-0"	54F
K.2-18.8	148'-0"	55A
K.2-18.8	166'-0"	55B
K.2-18.8	177'-0"	55C
K.2-18.8	189'-0"	55D
<u>DIESEL GENERATOR BUILDING</u>		
R-10.6	133'-0"	66A
R-8.4	133'-0"	66B

PLANT SYSTEMS

YARD FIRE HYDRANTS AND HYDRANT HOSE HOUSES

LIMITING CONDITION FOR OPERATION

3.7.6.6 The yard fire hydrants and associated hydrant hose houses shown in Table 3.7.6.6-1 shall be OPERABLE.

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

ACTION:

- a. With one or more of the yard fire hydrants or associated hydrant hose houses shown in Table 3.7.6.6-1 inoperable, route sufficient additional lengths of fire hose of equal or greater diameter located in an adjacent OPERABLE hydrant hose house to provide service to the unprotected area(s) within 24 hours.
- b. The provisions of Specifications ~~3.0.3 and 3.0.4~~ are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6.6 Each of the yard fire hydrants and associated hydrant hose houses shown in Table 3.7.6.6-1 shall be demonstrated OPERABLE:

- a. At least once per 31 days by visual inspection of the hydrant hose house to assure all required equipment is at the hose house.
- b. At least once per 6 months, during March, April or May and during September, October or November, by visually inspecting each yard fire hydrant and verifying that the hydrant barrel is dry and that the hydrant is not damaged.
- c. At least once per 12 months by:
 1. Conducting a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure whichever is greater.
 2. Replacement of all degraded gaskets in couplings.
 3. Performing a flow check of each hydrant.

TABLE 3.7.6.6-1

YARD FIRE HYDRANTS AND ASSOCIATED HYDRANT HOSE HOUSES

<u>LOCATION</u>		<u>HYDRANT NUMBER/HYDRANT HOSE HOUSE NUMBER</u>	
<u>North Coord.</u>	<u>East Coord.</u>	<u>Elevation</u>	
9,616.00	10,500.00	133'0"	D021/HHD 0298
9,570.00	10,299.00	133'0"	D023/HHD 029C
9,570.00	10,012.50	133'0"	D024/HHD 029D
9,798.00	9,979.00	133'0"	D025/HHD 029E
10,112.50	9,753.92	133'0"	D010/HHD 029G
9,886.00	9,758.25	133'0"	D009/HHD 029Q
9,641.00	9,766.25	133'0"	D008/HHD 029F
10,097.12	10,500.00	133'0"	D019/HHD 029I
9,871.87	10,534.33	133'0"	D020/HHD 029A

PLANT SYSTEMS

3/4.7.7 FIRE RATED ASSEMBLIES

LIMITING CONDITION FOR OPERATION

3.7.7 All fire rated assemblies (walls, floor/ceilings, cable tray enclosures and other fire barriers) separating safety related fire areas or separating portions of redundant systems important to safe shutdown within a fire area, and all sealing devices in fire rated assembly penetrations (fire doors, fire windows, fire dampers, cable and piping penetration seals and ventilation seals) shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more of the above required fire rated assemblies and/or sealing devices inoperable, within one hour establish a continuous fire watch on at least one side of the affected assembly(s) and/or sealing device(s) or verify the OPERABILITY of fire detectors on at least one side of the inoperable assembly(s) and/or sealing device(s) and establish an hourly fire watch patrol.
- b. The provisions of Specifications ~~3.0.3 and 3.0.4~~ are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each of the above required fire rated assemblies and sealing devices shall be verified OPERABLE at least once per 18 months by performing a visual inspection of:

- a. The exposed surfaces of each fire rated assembly.
- b. Each fire window/fire damper and associated hardware.
- c. At least 10 percent of each type of sealed penetration. If apparent changes in appearance or abnormal degradations are found, a visual inspection of an additional 10 percent of each type of sealed penetration shall be made. This inspection process shall continue until a 10 percent sample with no apparent changes in appearance or abnormal degradation is found. Samples shall be selected so that each penetration seal will be inspected at least once per 15 years.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.7.7.2 Each of the above required fire doors shall be verified OPERABLE by inspecting the automatic hold-open, release and closing mechanism and latches at least once per 6 months, and by verifying:

- a. The OPERABILITY of the fire door supervision system for each electrically supervised fire door by performing a CHANNEL FUNCTIONAL TEST at least once per 31 days.
- b. That each locked-closed fire door is closed at least once per 7 days.
- c. That doors with automatic hold-open and release mechanisms are free of obstructions at least once per 24 hours and performing a functional test of these mechanisms at least once per 18 months.
- d. That each unlocked fire door without electrical supervision is closed at least once per 24 hours.