EEE. MILK ANIMAL

A cow or goat that is producing milk for human consumption.

FFF. DOSE EQUIVALENT IODINE

The DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcurie/gram), which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The tyroid dose conversion factors used for this calculation shall be those listed in table III of TID-14844 or those in NRC Regulatory Guide 1.109, Revision 1, October 1977

GGG. ACTION

ACTION shall be that part of a specification which prescribes remedial measures required under designated conditions.

HHH. CHANNEL CHECK

A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

III. STAGGERED TEST BASIS

STAGGERED TEST BASIS shall consist of:

- a. A test schedule for n systems, subsystems trains or other designated components obtained by dividing the specified test interval into n equal subintervals,
- b. The testing of one system, subsystem, train or other designated components at the beginning of each subinterval.

8604140216 860331 PDR ADOCK 05000321

3.5.A.2. Operation with Inoperable Components

If one CS system loop is inoperable, the reactor may remain in operation for a period not to exceed seven (7) days providing all active components in the other CS system loop, the RHR system LPCI mode and the diesel generators (per Specification 4.9.A.2.a) are operable.

3. Shutdown Requirements

If Specification 3.5.A.1.a or 3.5.A.2. cannot be met the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

- B. Residual Heat Removal (RHR) System (LPCI and Containment Cooling Mode)
 - 1. Normal System Availability
 - a. The RHR System shall be operable:
 - Prior to reactor startup from a cold condition, or
 - (2) When irradiated fuel is in the reactor vessel and the reactor pressure is greater than atmospheric except as stated in Specification 3.5.B.2.

SURVEILLANCE REQUIREMENTS

4.5.A.2. <u>Surveillance with Inoperable</u> Components

> When it is determined that one core spray loop is inoperable at a time when operability is required, the other core spray loop, and the RHR system LPC1 mode shall be demonstrated to be operable immediately. The operable core spray loop shall be demonstrated to be operable daily until both loops are returned to normal operation.

- B. <u>Residual Heat Removal (RHR)</u> <u>System (LPCI and Containment</u> Cooling Mode)
 - 1. Normal Operational Tests

RHR system testing shall be performed as follows:

Item

Frequency

a. Air test on Once/5 years drywell headers and nozzles and air or water test on torus headers and nozzles

3.5.B.1. Normal System Availability (Cont.)

One RER loop with two pumps or two loops with one pump per loop shall be operable in the shutdown cooling mode when irradiated fuel is in the reactor vessel and the reactor pressure is atmospheric except prior to a reactor startup as stated in Specification 3.5.B.1.a.

- c. The reactor shall not be started up with the RHR system supplying cooling to the fuel pool.
- d. During reactor power operation, the LPCI system discharge cross-tie valve, Ell-F010, shall be in the closed position and the associated valve motor starter circuit breaker shall be locked in the off position. In addition, an annunciator which indicates that the cross-tie valve is not in the fully closed position shall be available in the control room.
- e. Both recirculation pump discharge valves shall be operable prior to reactor startup (or closed if permitted elsewhere in these specifications).
- 2. Operation with Inoperable Components

a. One LPCI Pump Inoperable

If one LPCI pump is inoperable, the reactor may remain in operation for a period of not to exceed seven (7) days provided that the remaining LPCI pumps, both LPCI subsystem flow paths, the Core Spray system, and the associated diesel generators are operable (per Specification 4.9.A.2.a).

b. One LPCI Subsystem Inoperable

A LPCI subsystem is considered to to be inoperable if (1) both of the LPCI pumps within that system are inoperable or (2) the active valves in the subsystem flow path are inoperable.

SURVEILLANCE REQUIREMENTS

4.5.B.1. Normal Operational Tests

	Item	Frequency
ь.	Simulated Automatic Actuation	Once/Operating Cycle
	Test	

- c. System flow Once/3 months rate: Each RHR Pump shall deliver at least 7700 gpm against a system head of at least 20 psig.
- d. Pump Opera- Once/month bility
- e. Motor Oper- Once/month ated valve operability
- f. Both recirculation pump discharge valves shall be tested for operability during any outage exceeding 48 hours, if operability tests have not been performed during the preceding month.
- 2. Surveillance with Inoperable Components

a. One LPCI Pump Inoperable

When one LPCI pump is inoperable the remaining LPCI pumps and associated flow paths, and the Core Spray system shall be demonstrated to be operable immediately and daily thereafter, until the inoperable LPCI pump is restored to normal service.

b. One LPCI Subsystem Inoperable

When one LPCI subsystem is inoperable, all active components of the remaining LPCI subsystem and the Core Spray system shall be demonstrated to be operable, immediately

3.5.B.2. Operation with Inoperable Components (Continued)

.

b. If one LPCI subsystem is inoperable, the reactor may remain in operation for a period not to exceed seven (7) days provided that all active components of the remaining LPCI subsystem, the Core Spray system, and the associated diesel generators are operable (per Specification 4.9.A.2.a).

SURVEILLANCE REQUIREMENTS

4.5.B.2. Surveillance with Inoperable Components (Continued)

> and daily thereafter, until the inoperable LPCI subsystem is restored to normal service.

3.5.C.3. Two Pumps Inoperable

If two RHR service water pumps are inoperable, the reactor may remain in operation for a period not to exceed seven (7) days provided all redundant active components in both of the RHR service water subsystems are operable.

4. Shutdown Requirements

If Specifications 3.5.C cannot be met, the reactor shall be placed in the Cold Shutdown Condition within 24 hours.

D. <u>High Pressure Coolant Injection</u> (HPCI) System

1. Normal System Availability

- a. The HPCI System shall be operable:
 - Prior to reactor startup from a cold condition, or
 - When irradiated fuel is in the reactor vessel and the reactor pressure is greater than 150 psig, except as stated in Specification 3.5.D.2.

SURVEILLANCE REQUIREMENTS

4.5.C.3. Two Pumps Inoperable

When two RHR service water pumps are inoperable, the remaining operable RHR service water subsystems shall be demonstrated to be operable immediately and daily thereafter for seven (7) days or until the inoperable components are returned to normal operation.

- D. <u>High Pressure Coolant Injection</u> (HPCI) System
- 1. Normal Operational Tests

HPCI system testing shall be performed as follows:

Item

Frequency

a. Simulated automatic actuation test Once/Operating Cycle

b. Flow rate at Once/3 months normal reactor vessel operating pressure and Flow rate at Once/Operating 150 psig Cycle reactor pressure

HATCH - UNIT 1

3.5-6

3.5.G. Minimum Core and Containment Cooling System Availability

During any period when one of the standby diesel generators is inoperable, continued reactor operation is limited to seven (7) days unless operability of the diesel generator is restored within this period. During such seven (7) days all of the components in the RHR system LPCI mode and containment cooling mode shall be operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown Condition within 24 hours. Specification 3.9 provides further guidance on electrical system availability.

Any combination of inoperable components in the core and containment cooling systems shall not defeat the capability of the remaining operable components to fulfill the core and containment cooling functions.

When irradiated fuel is in the reactor vessel and the reactor is in the Cold Shutdown Condition, both core spray systems and the LPCI and containment cooling subsystems of the RHR system may be inoperable provided that the shutdown cooling subsystem of the RHR system is operable in accordance with Specification 3.5.B.1.b and that no work is being done which has the potential for draining the reactor vessel.

SURVEILLANCE REQUIREMENTS

4.5.G. Surveillance of Core and Containment Cooling Systems

> When it is determined that one of the standby diesel generators is inoperable, all of the components in the RHR system LPCI mode and containment cooling mode connected to the operable diesel generators shall be demonstrated to be operable immediately and daily thereafter.

H. <u>Maintenance of Filled Discharge</u> Pipes

Whenever the core spray system, LPCI, HPCI, or RCIC are required to be operable, the discharge piping from the pump discharge of these systems to the last block valve shall be filled. The suction of the HPCI pumps shall be aligned to the condensate storage tank.

SURVEILLANCE REQUIREMENTS

H. <u>Maintenance of Filled Discharge</u> <u>Pipes</u>

The following surveillance requirements shall be performed to assure that the discharge piping of the core spray system, LPCI, HPCI, and RCIC are filled when required:

 Every month prior to the testing of the LPCI and core spray systems, the discharge piping of these systems shall be vented

3.5.J. Plant Service Water Systems

1. Normal Availability

The reactor shall not be made critical from the cold shutdown condition unless the Plant Service Water System (including 4 plant service water pumps and the standby service water pump) is operable.

2. Inoperable Components

- a. The standby service water pump may be inoperable for a period not to exceed 60 days provided that an alternate Unit 1 plant service water cooling source to the 1B diesel generator is OPERABLE.
- b.One PSW pump may be inoperable for a period not to exceed 30 days provided all diesel generators are operable per Specification 4.9.A.2.a.
- c.One PSW pump and the standby service water pump may be inoperable for a period not to exceed 30 days provided all diesel generators are operable per Specification 4.9.A.2.a.
- d.Two PSW pumps or one PSW division may be inoperable for a period not to exceed 7 days provided the diesel generators associated with the operable PSW components are operable per Specification 4.9.A.2.a.

HATCH - UNIT 1

3.5-12

SURVEILLANCE REQUIREMENTS

4.5.J. Plant Service Water System

 The automatic pump start functions and automatic isolation functions shall be tested once per operating cycle.

2. Inoperable Components

- a. With the standby service water subsystem inoperable for up to 60 days, provide Unit 1 service water cooling to the 1B diesel generator by verifying OPERABILITY of an alternate Unit 1 service water cooling source within 8 hours. Otherwise, declare the 1B diesel generator inoperable and take the action required by Specification 3.9.B.2.
- b. When one PSW pump is made or found to be inoperable, the standby service water pump, the three remaining PSW pumps, and both PSW divisions shall be demonstrated to be operable immediately and weekly thereafter.
- c. When one PSW pump and the standby service water pump are made or found to be inoperable, the three remaining PSW pumps, and both PSW divisions shall be demonstrated to be operable immediately and weekly thereafter.
- d. When two PSW pumps or one PSW division are made or found to be inoperable, the standby service water pump and all active components of the operable division or divisions shall be demonstrated to be operable immediately and daily thereafter.

3.5.J.Plant Service Water Systems

- 2. Inoperable Components (Cont'd)
 - e. Two PSW pumps or one PSW division, and the standby service water pump may be inoperable for a period not to exceed 7 days provided the diesel generators associated with the operable PSW components are operable per Specification 4.9.A.2.a.

For each condition above in which the standby service water pump is inoperable, cooling water to diesel generator 1B shall be intertied with the PSW divisional piping supply.

3. Shutdown Requirements

If the requirements of Specifications 3.5.J.1 and 3.5.J.2 cannot be met the reactor shall be placed in the cold shutdown condition within 24 hours.

3.5.K.Equipment Area Coolers

- 1. The equipment area coolers serving the Reactor Core Isolation Cooling (RCIC), High Pressure Coolant Injection (HPCI), Core Spray or Residual Heat Removal (RHR) pumps must be operable at all times when the pump or pumps served by that specific cooler is considered to be operable.
- When an equipment area cooler is not operable, the pump(s) served by that cooler must be considered inoperable for Technical Specification purposes.

SURVEILLANCE REQUIREMENTS

4.5.J. Plant Service Water System

- 2. Inoperable Components (Cont'd)
 - e. When two PSV pumps or one PSW division, and the standby service water pump are made or found to be inoperable, all active components of the operable division or divisions shall be demonstrated to be operable immediately and daily thereafter.

When cooling water to diesel generator 1B is intertied with the PSW divisional piping supply, operability of the divisional interlock valves shall be demonstrated.

4.5.K. Equipment Area Coolers

 Each equipment area cooler is operated in conjunction with the equipment served by that particular cooler; therefore, the equipment area coolers are tested at the same frequency as the pumps which they serve.

HATCH - UNIT 1

3.5-13

BASES FOR LIMITING CONDITIONS FOR OPERATION AND SURVEILANCE REQUIREMENTS

3.5. CORE AND CONTAINMENT COOLING SYSTEMS

A. Core Spray (CS) System

1. Normal System Availability

Analyses presented in Section 6 of the FSAR and Appendix I of the HNP-2 PSAR demonstrated that the core spray system provides adequate cooling to the core to dissipate the energy associated with the loss-of-coolant accident and to limit fuel clad temperature to below 2,300°F which assures that core geometry remains intact and to limit any clad metal-water reaction to less than one percent. Core spray distribution has been shown in tests of systems similar in design to HNP-1 to exceed the minimum requirements. In addition, cooling effectiveness has been demonstrated at less than half the rated flow in simulated fuel assemblies with heater rods to duplicate the decay heat characteristics of irradiated fuel.

The intent of the CS system specifications is to prevent operation above atmospheric pressure without all associated equipment being operable. However, during operation, certain components may be out of service for the specified allowable repair times. The allowable repair times have been selected using engineering judgment based on experiences and supported by availability analysis. Assurance of the availability of the remaining systems is increased by demonstrating operability immediately and by requiring selected testing during the outage period.

When the reactor vessel pressure is atmospheric, the limiting conditions for operation are less restrictive. At atmospheric pressure, the minimum requirement is for one supply of makeup water to the core. Requiring two operable RHR pumps and one CS pump provides redundancy to ensure makeup water availability.

2. Operation with Inoperable Components

Should one core spray loop become inoperable: the remaining core spray loop and the RHR system are demonstrated to be operable to ensure their availability should the need for core cooling arise. These provide extensive margin over the operable equipment needed for adequate core cooling. With due regard for this margin, the allowable repair time of 7 days was chosen.

B. Residual Heat Removal (RHR) System (LPCI and Containment Cooling Mode)

1. Normal System Availability

The RHR system LPCI mode is designed to provide emergency cooling to the core by flooding in the event of a loss-of-coolant accident. This system is completely independent of the core spray system; however, it does function in combination with the core spray system to prevent excessive fuel clad temperature. The LPCI mode of the RHR system and the core spray system provide adequate cooling for break areas of approximately 0.2 square feet up to and including the double-ended recirculation line break without assistance from the high-pressure emergency core cooling systems.

3.5.B.1. Normal System Availability (Continued)

Observation of the stated requirements for the containment cooling mode assures that the suppression pool and the drywell will be sufficiently cooled, following a loss-of-coolant accident, to prevent primary containment overpressurization. The containment cooling function of the RHR system is permitted only after the core has reflooded to the two-thirds core height level. This prevents inadvertently diverting water needed for core flooding to the less urgent task of containment cooling. The two-thirds core height level interlock may be manually bypassed by a keylock switch.

The intent of the RHR system specifications is to prevent operation above atmospheric pressure without all associated equipment being operable. However, during operation, certain components may be out of service for the specified allowable repair times. The allowable repair times have been selected using engineering judgment based on experiences and supported by availability analysis. Assurance of the availability of the remaining systems is increased by demonstrating operability immediately and by requiring selected testing during the outage period.

When the reactor vessel pressure is atmospheric, the limiting conditions for operation are less restrictive. At atmospheric pressure, the minimum requirement is for one supply of makeup water to the core.

2. Operation with Inoperable Components

With one LPCI pump inoperable or one LPCI subsystem inoperable, adequate core flooding is assured by the demonstrated operability of the redundant LPCI pumps and LPCI subsystem, and the Core Spray system. The reduced redundancy justifies the specified 7 day out-of-service period.

3.9. AUXILIARY ELECTRICAL SYSTEMS

Applicability

The Limiting Conditions for Operation apply to the auxiliary electrical power systems.

Objective

The objective of the Limiting Conditions for Operation is to assure an adequate supply of electrical power for operation of those systems required for safety.

Specifications

A. Requirements for Reactor Startup

> The reactor shall not be made critical from the Cold Shutdown Condition unless all of the following conditions are satisfied:

1. Offsite Power Sources

At least two 230 kV offsite transmission lines shall be available and each shall be capable of supplying auxiliary power to the emergency 4160 volt buses (1E, 1F, and 1G) and each shall be capable of supplying power to both startup auxiliary transformers (1C and 1D).

2. Standby AC Power Supply (Diesel Generators 1A, 1B, and 1C)

Three diesel generators 1A, 1B and 1C) shall be operable and capable of supplying power to the emergency 4160 volt buses (1E, 1F, and 1G).

For each diesel generator to be operable and capable of supplying power, the following conditions must be met:

HATCH - UNIT 1

4

1

SURVEILLANCE REQUIREMENTS

4.9. AUXILIARY ELECTRICAL SYSTEMS

Applicability

The Surveillance Requirements apply to the periodic testing requirements of the auxiliary electrical power systems.

Objective

The objective of the Surveillance Requirements is to verify the operability of the auxiliary electrical systems.

Specifications

A. <u>Auxiliary Electrical Systems</u> Equipment

Tests shall be performed at scheduled intervals as follows to detect deterioration of equipment and to demonstrate that auxiliary electrical systems equipment and components are operable.

1. Offsite Power Sources

Verify correct breaker alignments and indicated power availability at least once per 7 days.

2. <u>Standby AC Power Supply (Diesel</u> Generators 1A, 1B, and 1C)

> The following periodic tests and surveillance of the standby AC power supply (Diesel Generators IA, IB, and IC) shall be performed:

3.9.A.2. Standby AC Power Supply (Diesel Generators 1A, 1B, and 1C) (Contintued)

> a. <u>Operability</u> The diesel generator itself and its auxiliaries are operable.

SURVEILLANCE REQUIREMENTS

4.9.A.2.<u>Standby AC Power Supply (Diesel</u> Generators 1A, 1B, and 1C) (Continued)

a. Operability

- 1.Each diesel generator shall be manually started and loaded to demonstrate operational readiness in accordance with the frequency specified in Table 4.9-1 on a Staggered Test Basis. Verify that each diesel starts from ambient condition, gradually load the generator to 1710-2000 KW* and operate for ≥ 60 minutes. During the generator test, the starting air compressor shall be checked for operation and for its ability to recharge the air system.
- 2.At least once per 184 days, each diesel generator shall be started and verified to reach sychronous speed in < 12 seconds, loaded to an indicated 2250-2400 KW* for 1A and 1C and 2360-2425 KW* for 1B in < 120 seconds, and operated for > 60 minutes.
- b. Diesel Battery (125 Volt) Each 125 volt diesel battery shall be subjected to the same periodic surveillance as the plant batteries in Specification 4.9.A.3.
- c. <u>Battery Charger</u> Indicators shall be provided to monitor the status of the battery charger supply. This instrumentation shall include indication of output current and output voltage.
- d. <u>Diesel Fuel</u> Each month the quantity of diesel fuel available in each fuel storage tank shall be measured and recorded.

*Momentary variations outside this band shall not invalidate the test.

- b. <u>Diesel Battery (125 Volt)</u> Each 125 volt diesel battery is operable and capable of supplying the required load.
- c. <u>Battery Charger</u> An operable battery charger is available. Each battery charger shall have adequate capacity to restore its battery to full charge within 24 hours from a discharged condition while carrying the DC load.
- d. <u>Diesel Fuel</u> There shall be a minimum of 80,000 gallons of acceptable diesel fuel in the diesel fuel storage tanks.

LIMITING	CONDTIONS	FOR	OPERATION
----------	-----------	-----	-----------

SURVEILLANCE REQUIREMENTS

- 4.9.A.2.<u>Standby AC Power Supply Diesel</u> Generators 1A, 1B, and 1C) (Continued)
 - d. <u>Diesel Fuel (Cont'd)</u> At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D-270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.
 - e. Fuel Oil Transfer Pumps The operation of the diesel fuel oil transfer pumps shall be demonstrated once each month.

3.9.B.1. One Startup Auxiliary Transformer (1C or 1D) Inoperable or Only One Offsite Power Source Available (230 kV Transmission Line)

> Reactor operation is permissible for seven days from the date that one startup auxiliary transformer (1C or 1D) is inoperable or incoming power is available from only one 230 kV offsite transmission line provided the increased Surveillance Requirements as stated in Specification 4.9.B.1 are implemented.

One Diesel Generator (1A, 1B, or 1C) Inoperable

From and after the date that one of the diesel generators is made or found to be inoperable, continued reactor operation is permissible in accordance with Specification 3.5.G for a period not to exceed seven days provided that two 230 kV offsite transmission lines are available, both remaining diesel generators and associated emergency buses are operable, and the increased Surveillance Requirements as stated in Specification 4.9.B.2 are implemented.

3. One 125/250 Volt DC Power System (Plant Battery 1A or 1B) Inoperable

> From and after the date that one of the two 125/250 volt plant batteries is made or found to be inoperable, continued reactor operation is permissible during the succeeding seven (7) days within electrical safety considerations, provided repair work is initiated immediately to return the failed component to an operable state, Specification 3.5.G is satisfied,

SURVEILLANCE REQUIREMENTS

4.9.B.1. One Startup Auxiliary Transformer (1C or 1D) Inoperable or Only One Offsite Power Source Available (230 kV Transmission Line)

> When it is established that one startup auxiliary transformer (1C or 1D) is inoperable or incoming power is available from only one 230 kV offsite transmission line, verify correct breaker alignments and indicated power availability within one hour and at least once per eight hours thereafter, and perform Surveillance Requirements 4.9.A.2.a within 24 hours .

 One Diesel Generator (1A, 1B, or 1C) Inoperable

> When it is established that one diesel generator (1A, 1B, or 1C) is inoperable, verify correct breaker alignments and indicated power availability within one hour and at least once per eight hours thereafter, and perform Surveillance Requirement 4.9.A.2.a within 24 hours, and every 72 hours thereafter.

3. One 125/250 Volt DC Power System (Plant Battery 1A or 1B) Inoperable

> When it is established that one of the 125/250 volt DC power systems (plant battery 1A or 1B) is made or found to be inoperable, the pilot cell voltage and specific gravity and the overall battery voltage of the operable plant battery shall be tested daily and determined to be satisfactory.

Table 4.9-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures In Last 20 Valid Tests*

Test Frequency

<	1	At	least	once	per	31	day
×	2	At	least	once	per	7	days

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, except that only the last 20 tests are used, and are determined on a per diesel basis.

ATTACHMENT 3.5

NRC DOCKET 50-366 OPERATING LICENSE NPF-5 EDWIN I. HATCH NUCLEAR PLANT - UNIT 2 PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS

The proposed changes to the Technical Specifications (Appendix A to Operating License NPF-5) would be incorporated as follows:

REMOVE PAGE	INSERT PAGE			
3/4 8-1	3/4 8-1			
3/4 8-2	3/4 8-2			
3/4 8-3	3/4 8-3			
	3/4 8-3a			
3/4 8-5	3/4 8-5			
3/4 8-8	3/4 8-8			

3/4.8.1 A.C. SOURCES

A.C. SOURCES - OPERATING

LIMITING CONDTION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Three separate and independent diesel generators, each with:
 - A separate day tank containing a minimum of 900 gallons of fuel,
 - A separate fuel storage tank containing a minimum of 32,000 gallons of fuel, and
 - 3. A separate fuel transfer pump.

APPLICABILITY: CONDTIONS 1, 2, and 3.

ACTION:

- a. With one offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining offsite A.C. source by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours. Restore at least two offsite circuits to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter, and by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours. Restore at least three diesel generators to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

- c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter, and by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours. Restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore the other AC power source (offsite circuit or diesel generator set) to operable status in accordance with the provisions of Section 3.8.1.1 Action Statements a or b, as appropriate from the time of initial loss.
- d. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 8 hours, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN with the next 12 hours. With only one offsite source restored, restore the remaining offsite circuit to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a. within one hour and at least once per 8 hours thereafter, and by performing Surveillance Requirement 4.8.1.1.2.a.4 within 4 hours. Restore at least one of the inoperab e diesel generators to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore three diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring, manually and automatically, unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8.1.1.2-1 on a STAGGERED TEST BASIS by:
 - 1. Verifying the fuel level in the day fuel tanks.
 - 2. Verifying the fuel level in the plant fuel storage tank.
 - Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 - 4. Verifying that each diesel starts from ambient condition by gradually loading the generator to 1710-2000 kW*, and operating for > 60 minutes.
 - Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
 - Verifying the pressure in both diesel air start receivers to be > 225 psig.
- b. At least once per 184 days by verifying the diesel starts from ambient condition and accelerates to synchronous speed in < 12 seconds, is loaded to 2764-2825 kW* for diesel generator 2A, 2360-2425 kW* for diesel generator 1B, and 2742-2825 kW* for diesel generator 2C in < 120 seconds, and operates for > 60 minutes thereafter.
- c. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.

*Momentary variations outside this band shall not invalidate the test.

SURVEILLANCE REQUIREMENTS (Continued)

- d. 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 this class of standby service.
 - Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within + 10% of its design interval.
 - 3. Verifying the generator capability to reject a load of > 798 kw while maintaining voltage at 4160 + 400 volts and frequency at 60 + 2 Hz.

SURVEILLANCE REQUIREMENTS (Continued)

- 9. Verifying the diesel generator operates for at least 24 hours. During the first 22 hours of this test, the diesel generator shall be loaded to 2764-2825 kW* for diesel generator 2A, 2360-2425 kW* for diesel generator 1B and 2742-2825 kW* for diesel generator 2C and during the remaining 2 hours of this test, the diesel generator shall be loaded > 2950 KW for diesel generator 2A, > 2547 KW for diesel generator 1B and > 2928 KW for diesel generator 2C. Within 5 minutes after completing this 24 hour test, repeat Specification 4.8.1.1.2.d.5.
- Verifying that the auto-connected loads to each diesel generator do not exceed the 2 hour rating of 3135 kw.
- 11. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
 - b) Transfer its loads to the offsite power source, and
 - c) Proceed through its shutdown sequence.
- 12. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizes the emergency loads with offsite power.
- 13. Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the day tank of each diesel via the installed cross connection lines.
- d. At least once per 5 years by verifying that with both air start receivers pressurized to < 225 psig and the compressors secured, the diesel generator starts at least 5 times from ambient conditions and accelerates to sychronous speed in < 12 seconds.</p>
- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to synchronous speed in < 12 seconds.</p>

*Momentary variations outside this band shall not invalidate the test.

TABLE 4.8.1.1.2-1

DIESEL GENERATOR TEST SCHEDULE

Number of Failures In Last 20 Valid Tests*

Test Frequency

At least once per 31 days

At least once per 7 days

≤ 1 > 2

*Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.@ of Regulatory Guide 1.108, Revision 1, August 1977, except that only the last 20 tests are used and are determined on a per diesel basis.