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TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT[3]	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area (RM-207)	1	(1)	≤ 15 mR/hr	10^{-1} - 10^{4} mR/hr	19
b. Containment					
i. Purge & Exhaust Isolation (RMVS 104 A & B)	2	(2)	≤ 1.6 x 10^{3} cpm	10 - 10^{6} cpm	22
ii. Area (RM-RM-219 A & B)	2	1,2,3 & 4	≤ 1.5 x 10^{4} R/hr	1 - 10^{7} R/hr	35
c. Control Room Isolation (RM-RM-218 A & B)	2	1,2,3,4 and (4)	≤ .47 mR/hr	10^{-2} - 10^{3} mR/hr	41
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity RCS Leakage Detection (RM 215B)	1	1,2,3 & 4	N/A	10 - 10^{6} cpm	20
ii. Particulate Activity RCS Leakage Detection (RM 215A)	1	1,2,3 & 4	N/A	10 - 10^{6} cpm	20
b. Deleted					

TABLE 3.3-6 (Continued)

TABLE NOTATIONS

(1) With fuel in the storage pool or building.
(2) During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.
(3) Above background.
(4) During movement of irradiated fuel assemblies and during movement of fuel assemblies over irradiated fuel assemblies.
(5) Nominal range for Ch. 7 and Ch. 9. Alarm set on Ch. 7.
(6) Nominal range for Ch. 7 and Ch. 9. Alarm set on Ch. 9.
(7) Other SPING-4 channels not applicable to this specification.

ACTION STATEMENTS

ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - This Action is not used.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 hours, or:

a) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

b) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

ACTION 41 - a) With the number of Unit 1 OPERABLE channels one less than the Minimum Channels OPERABLE requirement:

1. Verify the respective Unit 2 control room radiation monitor train is OPERABLE within 1 hour and at least once per 31 days.

TABLE 3.3-6 (Continued)

ACTION STATEMENTS

ACTION 41 (Continued)

2. With the respective Unit 2 control room radiation monitor train inoperable, suspend all operations involving movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies within 1 hour and restore the Unit 1 control room radiation monitor to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

b) With no Unit 1 control room radiation monitors OPERABLE:

1. Verify both Unit 2 control room radiation monitors are OPERABLE within 1 hour and at least once per 31 days.

2. With either Unit 2 control room radiation monitor inoperable, suspend all operations involving movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies within 1 hour and restore the respective Unit 1 control room radiation monitor train to OPERABLE status within 7 days or isolate the control room from the outside atmosphere by closing all series air intake and exhaust isolation dampers, unless the respective Unit 2 control room radiation monitor train is restored to OPERABLE status within 7 days.

3. With no Unit 2 control room radiation monitors OPERABLE, immediately isolate the combined control room by closing all series air intake and exhaust isolation dampers and be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area (RM-207)	S	R	M	*
b. Containment				
i. Purge & Exhaust Isolation (RMVS 104 A & B)	S	R	M	**
ii. Area (RM-RM-219 A & B)	S	R	M	1,2,3,& 4
c. Control Room Isolation (RM-RM-218 A & B)	S	R	M###	1,2,3,4, and ##
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity RCS Leakage Detection (RM 215B)	S	R#	M	1,2,3 & 4
ii. Particulate Activity RCS Leakage Detection (RM 215A)	S	R#	M	1,2,3 & 4
b. Deleted				

* With fuel in the storage pool or building.

** During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

\# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.

\## During movement of irradiated fuel assemblies and during movement of fuel assemblies over irradiated fuel assemblies.

\### Control Room intake and exhaust isolation dampers and CREBAPS solenoid valves are not actuated.

SURVEILLANCE REQUIREMENTS (Continued)

2. Cycling each weight or spring loaded check valve testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is < 1.2 psid and opens, when the differential pressure in the direction of flow is > 1.2 psid but less than 6.0 psid.

b. Immediately prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of the applicable cycling test, above, and verification of isolation time.

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE* during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

c. Deleted.

d. Cycling each power operated or automatic valve through at least one complete cycle of full travel and measuring the isolation time.

e. Cycling each weight or spring loaded check valve not testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is < 1.2 psid and opens when the differential pressure in the direction of flow is ≥ 1.2 psid but less than 6.0 psid.

f. Cycling each manual valve not locked, sealed or otherwise secured in the closed position through at least one complete cycle of full travel.

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* Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEMS

LIMITING CONDITION FOR OPERATION

3.7.7.1 The control room emergency habitability system is OPERABLE* when:

a. Two out of three emergency ventilation subsystems, fans, associated filters and dampers are OPERABLE, and

b. Five bottled air pressurization subsystems consisting of two bottles per subsystem are OPERABLE**, and

c. The series normal air intake and exhaust isolation dampers for both units are OPERABLE, and capable of automatic closure on a CIB*** and Control Room High Radiation isolation signal, or OPERABLE by being secured in a closed position with power removed.

d. The control room air temperature is maintained ≤ 88°F.

APPLICABILITY: MODES 1, 2, 3 and 4, and

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

ACTION:

a. With less than two emergency ventilation subsystems, fans, and associated filters OPERABLE, restore at least two subsystems to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

a.1 With an emergency ventilation subsystem inlet isolation damper open and not capable of being closed, the requirements of 3.0.3 are applicable.

---

* Emergency power for only one train of dampers is required in MODES 5, 6 and with no fuel assemblies in the reactor pressure vessel.

** The air bottles may be isolated for up to 8 hours for performance of instrumentation and control systems testing.

*** Automatic actuation on a CIB signal is only required in MODES 1 through 4.

LIMITING CONDITION FOR OPERATION (continued)

b. With one bottled air pressurization subsystem inoperable, restore five bottled air pressurization subsystems to OPERABLE within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b.1 With less than four bottled air pressurization subsystems OPERABLE, the requirements of 3.0.3 are applicable and movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies shall be suspended.

c. With one open series normal air intake or exhaust isolation damper inoperable and not capable of closing, restore all series dampers to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c.1 With both series normal air intake or exhaust isolation dampers inoperable and not capable of being closed, the requirements of 3.0.3 are applicable and movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies shall be suspended.

d. With the control room air temperature > 88°F but ≤ 105°F, return the temperature to ≤ 88°F in 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d.1 With the control room air temperature > 105°F, be in at least HOT STANDBY within the next 4 hours and in COLD SHUTDOWN within the following 30 hours.

SHUTDOWN

LIMITING CONDITION FOR OPERATION

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

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

1. Day and engine-mounted fuel tanks containing a minimum of 900 usable gallons of fuel,

2. A fuel storage system containing a minimum of 17,500 usable gallons of fuel, and

3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6, and

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies, and movement of fuel assemblies over irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.6.

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. Busses shall be OPERABLE and energized in the specified manner:

a. Train "A" A.C. Emergency Busses consisting of:

1. 4160-Volt Emergency Bus #1AE,
2. 480-Volt Emergency Bus #8N,
3. 120-Volt A.C. Vital Bus #I energized from its associated inverter connected to D.C. Bus #1-1, and
4. 120-Volt A.C. Vital Bus #III energized from its associated inverter connected to D.C. Bus #1-3.

b. Train "B" A.C. Emergency Busses consisting of:

1. 4160-Volt Emergency Bus #1DF,
2. 480-Volt Emergency Bus #9P,
3. 120-Volt A.C. Vital Bus #II energized from its associated inverter connected to D.C. Bus #1-2, and
4. 120-Volt A.C. Vital Bus #IV energized from its associated inverter connected to D.C. Bus #1-4.

APPLICABILITY: MODES 5 and 6, and

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

ACTION:

With the above required train of A.C. Emergency Busses not fully energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies. Initiate corrective action to energize the required electrical busses in the specified manner as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, one of the following trains of D.C. electrical equipment and busses shall be OPERABLE and energized in the specified manner:

a. Train "A" (orange) consisting of the following:

1. 125-volt D.C. Busses No. 1-1 & 1-3, and
2. 125-volt D.C. Battery Banks 1-1 & 1-3 and Chargers 1-1 & 1-3.

b. Train "B" (purple) consisting of the following:

1. 125-volt D.C. Busses No. 1-2 & 1-4, and
2. 125-volt D.C. Battery Banks 1-2 & 1-4 and Chargers 1-2 & 1-4.

APPLICABILITY: MODES 5 and 6, and

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

ACTION:

With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operation involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies. Initiate corrective action to restore the required train of D.C. electrical equipment and busses to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 125-volt D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3 The reactor shall be subcritical for at least 150 hours.

APPLICABILITY: During movement of irradiated fuel assemblies in the reactor pressure vessel.

ACTION:

With the reactor subcritical for less than 150 hours, suspend all operations involving movement of irradiated fuel assemblies in the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3 The reactor shall be determined to have been subcritical for at least 150 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts,

b. A minimum of one door in each air lock is closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, manual valve, or approved functional equivalent, or

2. Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System with the containment air being exhausted through this system at a flow rate of ≤ 7500 cfm to at least one OPERABLE filtered Supplemental Leak Collection and Release System (SLCRS) train.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel assemblies within the containment and movement of fuel assemblies over recently irradiated fuel assemblies within the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment penetrations shall be determined to be in its above required condition at least once per 7 days.

4.9.4.2 The containment purge and exhaust system shall be demonstrated OPERABLE by:

a. Verifying the flow rate to the SLCRS at least once per 24 hours when the system is in operation,

b. Testing the Containment Purge and Exhaust Isolation Valves per the applicable portions of Specification 4.9.9, and

c. The required portions of SLCRS shall be demonstrated OPERABLE per Specification 4.7.8.1 with exception to item 4.7.8.1.c.2.

CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge and Exhaust isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION:

With the Containment Purge and Exhaust isolation system inoperable, close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE at least once per 7 days by verifying that containment Purge and Exhaust isolation occurs on manual initiation and on a high-high radiation signal from each of the containment radiation monitoring instrumentation channels and the isolation time of each system isolation valve is within limits.

3/4.9.10 WATER LEVEL - REACTOR VESSEL

LIMITING CONDITION FOR OPERATION

3.9.10 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over irradiated fuel assemblies within the containment.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of irradiated fuel assemblies within the containment and movement of fuel assemblies over irradiated fuel assemblies within the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.10 The water level shall be determined to be at least its minimum required depth at least once per 24 hours.

STORAGE POOL WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.11 As a minimum, 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool.

ACTION:

With the requirement of the specification not satisfied, suspend all movement of irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11 The water level in the fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days.

FUEL BUILDING VENTILATION SYSTEM - FUEL MOVEMENT

LIMITING CONDITION FOR OPERATION

3.9.12 The fuel building portion of the Supplemental Leak Collection and Release System (SLCRS) shall be OPERABLE and operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

ACTION:

With the requirement of the above specification not satisfied, suspend all operations involving movement of recently irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12.1 The fuel building portion of SLCRS shall be verified to be operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers and that all fuel building doors are closed[1] at least once per 12 hours.

4.9.12.2 The fuel building portion of SLCRS shall be demonstrated OPERABLE:

a. At least once per 18 months by:

   1. Verifying that the ventilation system maintains the spent fuel storage pool area at a negative pressure of ≥ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

b. Testing the SLCRS per Specification 4.7.8.1 with the exception to item 4.7.8.1.c.2.

---

(1) The fuel building doors may be opened for entry and exit.

3/4.9.13 (This Specification number is not used.)

BASES

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that: 1) the radiation levels are continually measured in the areas served by the individual channels; 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded; and 3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of NUREG-0737, "Clarification of TMI Action Plan Requirements," October, 1980.

A "recently" irradiated fuel assembly is fuel that has occupied part of a critical reactor core within the previous 100 hours.

3/4.3.3.2 (This Specification number is not used.)

3/4.3.3.3 (This Specification number is not used.)

3/4.3.3.4 (This Specification number is not used.)

3/4.7.7 CONTROL ROOM EMERGENCY HABITABILITY SYSTEM

The OPERABILITY of the control room emergency habitability system ensures that the control room will remain habitable for operations personnel during and following all credible accident conditions. The ambient air temperature is controlled to prevent exceeding the allowable equipment qualification temperature for the equipment and instrumentation in the control room. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent, or 5 rem TEDE, as applicable. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50 or 10 CFR 50.67, as applicable.

3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)

The OPERABILITY of the SLCRS provides for the filtering of postulated radioactive effluents resulting from leakage of LOSS OF COOLANT ACCIDENT (LOCA) activity from systems outside of the Reactor Containment building, such as Engineered Safeguards Features (ESF) equipment, prior to their release to the environment. This system also collects potential leakage of LOCA activity from the Reactor Containment building penetrations into the contiguous areas ventilated by the SLCRS except for the Main Steam Valve Room and Emergency Air Lock. System operation was also assumed in that portion of the Design Basis Accident (DBA) LOCA analysis which addressed ESF leakage following the LOCA, however, no credit for SLCRS operation was taken in the DBA LOCA analysis for collection and filtration of Reactor Containment building leakage even though an unquantifiable amount of contiguous area penetration leakage would in fact be collected and filtered. Based on the results of the analyses, the SLCRS must be OPERABLE to ensure that ESF leakage following the postulated DBA LOCA will not exceed 10 CFR 100 limits.

3/4.7.9 SEALED SOURCE CONTAMINATION

The limitations on sealed source contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. Leakage of sources excluded from the requirements of this specification represent less than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested.

SEALED SOURCE CONTAMINATION (Continued)

Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.10 and 3/4.7.11 RESIDUAL HEAT REMOVAL SYSTEM (RHR)
Deleted

3/4.7.12 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during and following a seismic or other similar event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system during an earthquake or other similar event initiating dynamic loads. Therefore, the required inspection interval varies based upon the number of unacceptable snubbers found during the previous inspection, the total population or category size for each type of snubber, and the previous inspection interval. This criteria follows the guidance provided in NRC Generic Letter 90-09. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, or verified operable by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly

BASES

SNUBBERS (Continued)

related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation and vibration.

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

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at refueling or 18 month intervals not to exceed two (2) years. Observed failures of these sample snubbers shall require functional testing of additional units.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

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

3/4.8.1, 3/4.8.2 A.C. SOURCES, D.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The ACTION requirements specified in LCOs 3.8.1.2, 3.8.2.2, and 3.8.2.4 address the condition where sufficient power is unavailable to recover from postulated events (i.e. fuel handling accident). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods, 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems (i.e. Control Room Ventilation System) necessary to recover from postulated events in these MODES, e.g. a fuel handling accident.

In Modes 1 through 4, the specified quantity of 17,500 usable gallons required in each storage tank (35,000 total gallons) ensures a sufficient volume of fuel oil that, when added to the specified 900 usable gallon volume in the day and engine-mounted tanks, provides the fuel oil necessary to support a minimum of 7 days continuous operation of one diesel generator at full load (UFSAR Sections 8.5.2 and 9.14). The total volume in each of the tanks is greater due to the tank's physical characteristics.

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on minimum boron concentration (2000 ppm) ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. The Limitation of K_{eff} of no greater than 0.95 which includes a conservative allowance for uncertainties, is sufficient to prevent reactor criticality during refueling operations.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core when performing those evolutions with the potential to initiate criticality. Suitable detectors used in place of primary source range neutron flux monitors N-31 and N-32 are recognized as alternate detectors. Alternate detectors may be used in place of primary source range neutron flux monitors as long as the required indication is provided. Since installation of the upper internals does not involve movement of fuel or a significant positive reactivity addition to the core, one primary or alternate source range neutron flux monitor with continuous visual indication in the control room provides adequate neutron flux monitoring capability during this evolution.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The LCO is applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) to occur. Therefore, the requirements of this Specification may be required to limit leakage of radioactive material within the containment to the environment. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposures that are within the guideline values specified in 10 CFR 50.67 without any reliance on

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

the requirements of this Specification to limit leakage to the environment. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

An OPERABLE filtered SLCRS train is required to include only those portions of the system that are necessary to ensure that a filtered exhaust path is available from the required plant areas to HEPA and charcoal adsorbers and then to the elevated release point on top of the containment building.

The requirements on containment penetration closure and operability of the containment purge and exhaust system HEPA filters and charcoal adsorbers ensure that a release of radioactive material within containment will be restricted from leakage to the environment or filtered through the HEPA filters and charcoal adsorbers prior to discharge to the atmosphere within 10 CFR 50.67 limits. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from the number of fuel rods assumed to be ruptured in the FHA analysis based upon the lack of containment pressurization potential while in the REFUELING MODE.

All containment penetrations, except for the containment purge and exhaust penetrations, that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Penetration closure may be achieved by an isolation valve, blind flange, manual valve, or functional equivalent. Functional equivalent isolation ensures releases from the containment are prevented for credible accident scenarios. The isolation techniques must be approved by an engineering evaluation and may include use of a material that can provide a temporary, pressure tight seal capable of maintaining the integrity of the penetration to restrict the release of radioactive material from a fuel element rupture.

3/4.9.5 COMMUNICATIONS

The requirements for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

3/4.9.6 MANIPULATOR CRANE OPERABILITY

The OPERABILITY requirements for the manipulator cranes ensure that: 1) manipulator cranes will be used for movement of control rods and fuel assemblies; 2) each crane has sufficient load capacity to lift a control rod or fuel assembly; and 3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 (This Specification number is not used.)

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that 1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and 2) sufficient coolant circulation is maintained throughout the reactor core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

The LCO is applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) to occur. Therefore, the requirements of this Specification may be required to limit leakage of radioactive material within the containment to the environment. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposures that are within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit leakage to the environment. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay

3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM (Continued)

has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

THE OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The integrity of the containment penetrations of this system may be required to restrict the release of radioactive material from the containment atmosphere to acceptable levels which are less than those listed in 10 CFR 50.67.

3/4.9.10 AND 3/4.9.11 WATER LEVEL - REACTOR VESSEL AND STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99.5% of the assumed iodine gap activity (8% for iodine 131 and 5% for other iodines) released from the number of fuel rods assumed to be ruptured in the fuel handling accident analysis. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.12 FUEL BUILDING VENTILATION SYSTEM

The LCO is applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) to occur. Therefore, the requirements of this Specification may be required to limit leakage of radioactive material within the fuel building to the environment. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposures that are within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit leakage to the environment. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

The limitations on the storage pool ventilation system ensure that all radioactive material released, as a result of a fuel handling accident (FHA) within the fuel building involving recently irradiated fuel, will be filtered through the HEPA filters and charcoal adsorber

3/4.9.12 FUEL BUILDING VENTILATION SYSTEM (Continued)

prior to discharge to the atmosphere. The spent fuel pool area ventilation system is non-safety related and only recirculates air through the fuel building. The SLCRS portion of the ventilation system is safety-related and maintains a negative pressure in the fuel building. The SLCRS flow is normally exhausted to the atmosphere without filtering, however, the flow is diverted through the main filter banks by manual actuation or on a high radiation signal.

3/4.9.13 (This Specification is not used.)

3/4.9.14 FUEL STORAGE - SPENT FUEL STORAGE POOL

The requirements for fuel storage in the spent fuel pool ensure that: (1) the spent fuel pool will remain subcritical during fuel storage; and (2) a uniform boron concentration is maintained in the water volume in the spent fuel pool to provide negative reactivity for postulated accident conditions under the guidelines of ANSI 16.1-1975. The value of 0.95 or less for K_{eff} which includes all uncertainties at the 95/95 probability/confidence level is the acceptance criteria for fuel storage in the spent fuel pool.

The Action Statement applicable to fuel storage in the spent fuel pool ensures that: (1) the spent fuel pool is protected from distortion in the fuel storage pattern that could result in a critical array during the movement of fuel; and (2) the boron concentration is maintained at ≥ 1050 ppm (this includes a 50 ppm conservative allowance for uncertainties and 600 ppm for margin) during all actions involving movement of fuel in the spent fuel pool.

The Surveillance Requirements applicable to fuel storage in the spent fuel pool ensure that: (1) the fuel assemblies satisfy the analyzed U-235 enrichment limits or an analysis has been performed and it was determined that K_{eff} is ≤ 0.95; and (2) the boron concentration meets the 1050 ppm limit.

The reracked spent fuel pool consists of discrete Regions 1 and 2 with Region 2 further subdivided and identified as Regions 2 and 3. Region 1 is configured to store fuel with a nominal region average enrichment of 5.0 weight percent (w/o) with individual fuel assembly tolerance of + or - 0.05 w/o U-235. The most reactive of the Westinghouse 17 X 17 STD/Vantage 5H and OFA fuel assemblies yielded a maximum K_{eff} of 0.940 including all biases and uncertainties.

3/4.9.14 FUEL STORAGE - SPENT FUEL STORAGE POOL (Continued)

Region 2 racks are designed to store fuel with burnup consistent with its initial enrichment. A table of enrichment and corresponding required burnup is provided in the technical specification. A conservative value of the required burnup is given by the following linear equation:

> Minimum burnup for unrestricted storage in Region 2 in MWD/MTU = 12100 * E% - 20500, where E is the initial enrichment in w/o.

Storage cells in Region 2, which face the pool wall, are in an area of high neutron leakage and are capable of maintaining the K_{eff} below 0.95 with fuel that does not meet the foregoing burnup restriction. A separate calculation to establish the admissibility of storing low burnup fuel in these cells, designated Region 3, has been performed and a table of enrichment and corresponding required burnup is provided in the technical specification. This calculation was performed using the same analytical models and computer codes which were used in the high density rack design. A conservative value of the required burnup is given by the following linear equation:

> Minimum burnup for fuel storage in Region 3 in MWD/MTU = $- 480 * (E\%)^2 + 12,900 * E\% - 27,400$, where E is the initial enrichment in weight percent.

The maximum reactivity in Region 2 is 0.945 and in Region 3 is 0.946 if all cells are loaded with fuel with minimum allowable burnup. This includes all biases and uncertainties and appropriate allowance for uncertainty in depletion calculations.

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TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT[3]	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area (2RMF-RQ202)	1	(1)	≤ 75.8 mR/hr	10^{-1} to 10^{4} mR/hr	19
b. Containment Area (2RMR-RQ206 & 207)	2	1,2,3 & 4	≤ 2.0 x 10^{4}R/hr	1 to 10^{7} R/hr	35
c. Control Room Area (2RMC-RQ201 & 202)	2	1,2,3,4, and (4)	≤ 0.476 mR/hr	10^{-2} to 10^{3} mR/hr	46,47
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity (Xe-133) RCS Leakage Detection (2RMR-RQ303B)	1	1,2,3 & 4	N/A	10^{-6} to 10^{-1} µCi/cc	20
ii. Particulate Activity (I-131) RCS Leakage Detection (2RMR-RQ303A)	1	1,2,3 & 4	N/A	10^{-10} to 10^{-5} µCi/cc	20
b. Deleted					

TABLE 3.3-6 (Continued)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	SETPOINT[3]	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS (Continued)					
c. Noble Gas and Effluent Monitors					
i. Supplementary Leak Collection and Release System					
1) Mid Range Noble Gas (Xe-133) (2HVS-RQ109C)	1	1,2,3&4	N.A.	10^{-4} to 10^{2} µCi/cc	35
2) High Range Noble Gas (Xe-133) (2HVS-RQ109D)	1	1,2,3&4	N.A.	10^{-1} to 10^{5} µCi/cc	35
ii. Containment Purge Exhaust (Xe-133) (2HVR-RQ104A & B)	2	(5)	$\leq 1.01 \times 10^{-3}$ µCi/cc	10^{-6} to 10^{-1} µCi/cc	22
iii. Main Steam Discharge (Kr-88) (2MSS-RQ101A,B & C)	1/SG	1,2,3&4	$\leq 3.9 \times 10^{-2}$ µCi/cc	10^{-2} to 10^{3} µCi/cc	35

TABLE 3.3-6 (Continued)

TABLE NOTATIONS

(1) With fuel in the storage pool or building.

(2) Not used.

(3) Above background.

(4) During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

(5) During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION STATEMENTS

ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - This Action is not used.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 35 - With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2) Return the channel to OPERABLE status within 30 days, or, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS				
a. Fuel Storage Pool Area (2RMF-RQ202)	S	R	M	*
b. Containment Area (2RMR-RQ206 & 207)	S	R	M	1, 2, 3, 4
c. Control Room Area (2RMC-RQ201 & 202)	S	R	M	1, 2, 3, 4, and ##
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity RCS Leakage Detection (2RMR-RQ303B)	S	R#	M	1, 2, 3 & 4
ii. Particulate Activity RCS Leakage Detection (2RMR-RQ303A)	S	R#	M	1, 2, 3 & 4
b. Deleted				

* With fuel in the storage pool or building

\# Surveillance interval may be extended to the upcoming refueling outage if the interval between refueling outages is greater than 18 months.

\## During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies.

TABLE 4.3-3 (Continued)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS (Continued)				
c. Noble Gas Effluent Monitors				
i. Supplementary Leak Collection and Release System (2HVS-RQ109C & D)	S	R	M	1, 2, 3 & 4
ii. Containment Purge Exhaust (2HVR-RQ104A & B)	S	R	M	###
iii. Main Steam Discharge (2MSS-RQ101A, B & C)	S	R	M	1, 2, 3 & 4

During movement of recently irradiated fuel assemblies within the containment and during movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE* at least once per 18 months by:

a. Verifying that on a Phase A containment isolation test signal each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

c. Deleted.

d. Cycling each power operated or automatic valve through at least one complete cycle of full travel and measuring the isolation time pursuant to Specification 4.0.5.

e. Cycling each weight or spring loaded check valve not testable during plant operation, through one complete cycle of full travel and verifying that each check valve remains closed when the differential pressure in the direction of flow is < 1.2 psid and opens when the differential pressure in the direction of flow is ≥ 1.2 psid but less than 6.0 psid.

f. Cycling each manual valve not locked, sealed or otherwise secured in the closed position through at least one complete cycle of full travel.

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* Locked or sealed closed valves may be opened on an intermittent basis under administrative control.

3/4.7.7 CONTROL ROOM EMERGENCY AIR CLEANUP AND PRESSURIZATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 The Control Room Emergency Air Cleanup and Pressurization System comprised of the following shall be OPERABLE:

a. A pressurization filtration unit comprised of two trains of fans and filters, and flow path control dampers.**

b. A bottled air pressurization system comprised of 5 subsystems with two bottles in each subsystem.*

c. Two isolation dampers in series in each of four normal air flow paths (two intake and two exhaust) with each damper OPERABLE by automatic actuation*** or OPERABLE by being secured in a closed position with power removed.

APPLICABILITY: MODES 1, 2, 3 and 4, and

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

MODES 1, 2, 3 and 4:

With one train of the pressurization filtration unit, or one subsystem of the bottled air pressurization system, or one of two isolation dampers in series inoperable, restore the system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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* The air bottles may be isolated for up to 8 hours for performance of instrumentation and control systems testing.

** Emergency backup power for only one train of dampers and fans of the pressurization filtration unit is required in MODES 5, 6 and with no fuel assemblies in the reactor pressure vessel.

*** Automatic actuation on a CIB signal is only required in MODES 1 through 4.

LIMITING CONDITION FOR OPERATION (continued)

ACTION (Continued)

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies:

a. With one train of the pressurization filtration unit or one subsystem of the bottled air pressurization system, or one of two isolation dampers in series inoperable, restore the inoperable system to OPERABLE status within 7 days or suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

b. With both trains of the pressurization filtration unit, or more than one subsystem of the bottled air pressurization system, or two of two isolation dampers in series inoperable suspend all operations involving movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.7.1 The Control Room Emergency Air Cleanup and Pressurization System shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the control room air temperature is ≤ 88°F.

b. At least once per 31 days by:

1. Initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for 15 minutes with the heaters in operation.

2. Verifying that the bottled air pressurization system contains a minimum of 10 bottles of air each pressurized to at least 1825 psig and that each solenoid operated valve is powered from an operable emergency bus.

c. At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings by:

1. Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the pressurization filtration system at a flow rate of 800 to 1000 cfm.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the pressurization filtration system at a flow rate of 800 to 1000 cfm.

3. Verifying a system flow rate of 800 to 1000 cfm during system operation.

d. At least once per 18 months or (1) after 720 hours of system operation, or (2) following painting, fire or chemical release in the vicinity of control room outside air intakes while the system is operating, within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

e. At least once per 18 months by:

1. Verifying that the pressure drop for the combined HEPA filters and charcoal adsorber banks is less than 5.6 inches Water Gauge while operating the pressurization filtration system at a flow rate of 800 to 1000 cfm.

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that on a Containment Isolation Phase B/ Control Room High Radiation test signal, the system automatically closes all the series isolation ventilation system dampers which isolate the control room from the outside atmosphere and the system automatically starts 60 minutes later and supplies air to the control room through the HEPA filters and charcoal adsorber banks.

3. Deleted

4. Verifying that the pressurization filtration system maintains the control room at a positive pressure of ≥ 1/8 inch Water Gauge relative to the outside atmosphere during system operation.

5. Verifying that the heaters dissipate at least 3.87 kw and not exceeding 5.50 kw when tested in accordance with ANSI N510-1980.

6. Verifying that a control room high radiation/ containment phase B isolation signal will initiate operation of the bottled air pressurization system.

7. Verifying by a partial discharge test from four out of five sub-systems of the bottled air pressurization system at a discharge flow of less than 1000 cfm that the bottled air pressurization system will pressurize the control room to ≥ 1/8 inch Water Gauge relative to the outside atmosphere during system operation.

SHUTDOWN

LIMITING CONDITION FOR OPERATION

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

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

1. Day tank containing a minimum of 350 usable gallons of fuel,

2. A fuel storage system containing a minimum of 53,225 usable gallons of fuel,

3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6, and

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of recently irradiated fuel assemblies, and movement of fuel assemblies over recently irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.6.

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. Busses shall be OPERABLE and energized in the specified manner:

a. Train "A" A.C. Emergency Busses consisting of:

1. 4160-Volt Emergency Bus #2AE,
2. 480-Volt Emergency Bus #2N,
3. 120-Volt A.C. Vital Bus #I energized from its associated inverter connected to D.C. Bus #2-1, and
4. 120-Volt A.C. Vital Bus #III energized from its associated inverter connected to D.C. Bus #2-3.

b. Train "B" A.C. Emergency Busses consisting of:

1. 4160-Volt Emergency Bus #2DF,
2. 480-Volt Emergency Bus #2P,
3. 120-Volt A.C. Vital Bus #II energized from its associated inverter connected to D.C. Bus #2-2, and
4. 120-Volt A.C. Vital Bus #IV energized from its associated inverter connected to D.C. Bus #2-4.

APPLICABILITY: MODES 5 and 6, and

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

With less than the above required train of A.C. Emergency Busses not fully energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of recently irradiated fuel assemblies, and movement of fuel assemblies over recently irradiated fuel assemblies. Initiate corrective action to energize the required electrical busses in the specified manner as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, one of the following trains of D.C. electrical equipment and busses shall be OPERABLE and energized in the specified manner:

a. Train "A" (orange) consisting of the following:

1. 125-volt D.C. Busses No. 2-1 & 2-3, and
2. 125-volt D.C. Battery Banks 2-1 & 2-3 and Charger 2-1* & Rectifier 2-3*.

b. Train "B" (purple) consisting of the following:

1. 125-volt D.C. Busses No. 2-2 & 2-4, and
2. 125-volt D.C. Battery Banks 2-2 & 2-4 and Charger 2-2* & Rectifier 2-4*.

APPLICABILITY: MODES 5 and 6, and

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operation involving CORE ALTERATIONS, positive reactivity changes, movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies. Initiate corrective action to restore the required train of D.C. electrical equipment and busses to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 125-volt D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 125-volt battery bank and chargers/rectifiers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

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* Spare Charger 2-7 may be substituted for any one charger or rectifier.

DECAY TIME

LIMITING CONDITION OF OPERATION

3.9.3 The reactor shall be subcritical for at least 150 hours.

APPLICABILITY: During movement of irradiated fuel assemblies in the reactor pressure vessel

ACTION:

With the reactor subcritical for less than 150 hours, suspend all operations involving movement of irradiated fuel assemblies in the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3 The reactor shall be determined to have been subcritical for at least 150 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel.

LIMITING CONDITION FOR OPERATION (Continued)

d. The area(s) outside of containment, where the open containment penetration piping is located, is being exhausted to at least one OPERABLE filtered SLCRS train with all doors to the area(s) required to be serviced by SLCRS closed[1]; or

2. Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System with the containment air being exhausted through this system at a flow rate of ≤ 7500 cfm to at least one OPERABLE filtered SLCRS train.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel assemblies within the containment and movement of fuel assemblies over recently irradiated fuel assemblies within the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment penetrations shall be determined to be in its above required condition:

a. At least once per 7 days, and

b. For all areas located outside of containment containing open containment penetrations, including PAL doors, verify at least once per 12 hours that these areas are being exhausted to filtered SLCRS and that all required area doors are closed.[1]

(1) Except for entry and exit.

SURVEILLANCE REQUIREMENTS (Continued)

4.9.4.2 The containment purge and exhaust system shall be demonstrated OPERABLE by:

a. Verifying the flow rate to filtered SLCRS at least once per 24 hours when the system is in operation, and

b. Testing the Containment Purge and Exhaust Isolation Valves per the applicable portions of Specification 4.9.9.

4.9.4.3 The required portions of filtered SLCRS shall be demonstrated OPERABLE per Specification 4.7.8.1 with exception to item 4.7.8.1.c.2.

4.9.4.4 For areas required to be exhausted to filtered SLCRS (except for the containment), verify at least once per 7 days that filtered SLCRS can maintain the area at a negative pressure of ≤ -0.125 inches of water gauge with respect to atmospheric pressure. The verification shall establish the maximum equivalent containment penetration opening size for each applicable plant area.

CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge and Exhaust isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION:

With the Containment Purge and Exhaust isolation system inoperable, close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE at least once per 7 days by verifying that containment Purge and Exhaust isolation occurs on manual initiation and on a high radiation signal from each of the containment radiation monitoring instrumentation channels and the isolation time for each system isolation valve is within limits.

3/4.9.10 WATER LEVEL - REACTOR VESSEL

LIMITING CONDITION FOR OPERATION

3.9.10 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over irradiated fuel assemblies within the containment.

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of irradiated fuel assemblies within the containment and movement of fuel assemblies over irradiated fuel assemblies within the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.10 The water level shall be determined to be at least its minimum required depth at least once per 24 hours.

STORAGE POOL WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.11 As a minimum, 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool.

ACTION:

With the requirement of the specification not satisfied, suspend all movement of irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11 The water level in the fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days.

FUEL BUILDING VENTILATION SYSTEM - FUEL MOVEMENT

LIMITING CONDITION FOR OPERATION

3.9.12 The fuel building portion of the Supplemental Leak Collection and Release System (SLCRS) shall be OPERABLE and operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

ACTION:

With the requirement of the above specification not satisfied, suspend all operations involving movement of recently irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12.1 The fuel building portion of the SLCRS shall be verified to be operating with fuel building exhaust flow discharging through at least one train of SLCRS HEPA filters and charcoal adsorbers and that all fuel building doors are closed[1] at least once per 12 hours.

4.9.12.2 The fuel building portion of the SCLRS shall be demonstrated OPERABLE by testing the SLCRS per Specification 4.7.8 with the exception to item 4.7.8.1.c.2.

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(1) The fuel building doors may be opened for entry and exit.

3/4.9.13 (This Specification number is not used.)

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION (Continued)

CHANNEL CALIBRATION

The alternate source range detectors are modified by a note to indicate they are not subject to the source range detector surveillance requirements until they have been connected to the applicable circuits and are required to be OPERABLE. This complies with the testing requirements for components that are required to be OPERABLE.

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. The CHANNEL CALIBRATION for the source range neutron detectors consists of obtaining the detector plateau and preamp discriminator curves, evaluating those curves, and establishing detector operating conditions as directed by the detector manufacturer. The 18 month frequency is based on the need to perform this surveillance under the conditions that apply during a plant outage since performance at power is not possible. The protection and monitoring functions are also calibrated at an 18 month frequency as is normal for reactor protection instrument channels. Operating experience has shown these components usually pass the surveillance when performed on the 18 month frequency.

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that: 1) the radiation levels are continually measured in the areas served by the individual channels; 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded; and 3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of NUREG-0737, "Clarification of TMI Action Plan Requirements," October, 1980.

A "recently" irradiated fuel assembly is fuel that has occupied part of a critical reactor core within the previous 100 hours.

3/4.3.3.2 (This Specification number is not used.)

3/4.7.5 ULTIMATE HEAT SINK (Continued)

exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants."

3/4.7.6 FLOOD PROTECTION

The limitation on flood level ensures that facility operation will be terminated in the event of flood conditions. The limit of elevation 695 Mean Sea Level was selected on an arbitrary basis as an appropriate flood level at which to terminate further operation and initiate flood protection measures for safety related equipment.

3/4.7.7 CONTROL ROOM EMERGENCY AIR CLEANUP AND PRESSURIZATION SYSTEM

This LCO is applicable during MODES 1, 2, 3 and 4. This LCO is also applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) for which the requirements of this Specification may be required to limit radiation exposure to personnel occupying the control room. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposure, to personnel occupying the control room, that is within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit personnel exposure. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable, during fuel movement, unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

The OPERABILITY of the control room emergency air cleanup and pressurization system ensures that the control room will remain habitable with respect to potential radiation hazards for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent, or 5 rem TEDE, as applicable. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50 or 10 CFR 50.67, as applicable.

3/4.7.7 CONTROL ROOM EMERGENCY AIR CLEANUP AND PRESSURIZATION SYSTEM (Continued)

The control room air cleanup system includes two pressurization systems. The filtration pressurization system draws outside air through filters. The bottled air pressurization system pressurizes by discharge of air from bottles without filtration and with closure of intake and exhaust dampers. Although the bottles are shared with Unit 1, the discharge can be initiated by Unit 2 control systems in response to radiation levels. Closure of the intake and exhaust dampers can be initiated by Unit 2 control systems. However, closure of dampers in one intake and in one exhaust is dependent upon availability of Unit 1 power sources.

3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)

The OPERABILITY of the SLCRS provides for the filtering of postulated radioactive effluents resulting from leakage of loss of coolant accident (LOCA) activity from systems outside of the Reactor Containment building, such as Engineered Safeguards Features (ESF) equipment, prior to their release to the environment. This system also collects potential leakage of LOCA activity from the Reactor Containment building penetrations into the contiguous areas ventilated by the SLCRS except for the Emergency Air Lock. System operation was also assumed in that portion of the Design Basis Accident (DBA) LOCA analysis which addressed ESF leakage following the LOCA, however, no credit for SLCRS operation was taken in the DBA LOCA analysis for collection and filtration of Reactor Containment building leakage even though an unquantifiable amount of contiguous area penetration leakage would in fact be collected and filtered. Based on the results of the analyses, the SLCRS must be OPERABLE to ensure that ESF leakage following the postulated DBA LOCA will not exceed 10 CFR 100 limits.

3/4.7.9 SEALED SOURCE CONTAMINATION

The limitations on sealed source contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. Leakage of sources excluded from the requirements of this specification represent less than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested.

3/4.7.9 SEALED SOURCE CONTAMINATION (Continued)

Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.10 and 3/4.7.11 RESIDUAL HEAT REMOVAL SYSTEM (RHR)

Deleted

BASES

3/4.8.1, 3/4.8.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the safety analyses and are based upon maintaining at least one redundant set of onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The ACTION requirements specified in LCOs 3.8.1.2, 3.8.2.2, and 3.8.2.4 address the condition where sufficient power is unavailable to recover from postulated events, such as a fuel handling accident involving recently irradiated fuel. Due to radioactive decay, electrical power is only required to mitigate fuel handling accidents involving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours). Implementation of the ACTION requirements shall not preclude completion of actions to establish a safe conservative plant condition. Completion of the requirements will prevent the occurrence of postulated events for which mitigating actions would be required.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and 3) sufficient power is available for systems that may be necessary to recover from postulated events in these MODES, e.g., a fuel handling accident involving recently irradiated fuel.

3/4.8.1, 3/4.8.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION
(Continued)

The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are based on the recommendations of Regulatory Guides 1.9, Revision 2, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," December 1979; 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977; and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979, Appendix A to Generic Letter 84-15 and Generic Letter 83-26, "Clarification of Surveillance Requirements for Diesel Fuel Impurity Level Tests."

The quantity of 350 usable gallons in the day tank represents the analytical value of fuel necessary to run the diesel for at least 60 minutes at a load of 100% of continuous rating plus a minimum margin of 10% in accordance with ANSI N195 - 1976 which is referenced in Regulatory Guide 1.137 Rev. 1. The total tank volume is greater due to the tank's physical characteristics.

The quantity of 53,225 usable gallons is the analytical value required in the fuel storage tank that, when added to the 350 gallons, makes up the fuel necessary to support a minimum of 7 days continuous EDG operation at its rated load. This is in compliance with Regulatory Guide 1.137, Rev. 1. The total volume in this tank is greater due to the tank's physical characteristics.

The Surveillance Requirement for demonstrating the OPERABILITY of the Station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

3/4.8.1, 3/4.8.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION
(Continued)

Table 3.8-1 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 3.8-1 is permitted for up to 7 days. During this 7 day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; 3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and 4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

Note (1) provides clarification of Specification 3.8.1.1 Action requirements when the diesel generators are inoperable as a result of Surveillance Requirements 4.8.1.1.2.d.2 and 4.8.1.1.2.e in accordance with Regulatory Guide 1.137, Revision 1, Position C.2.a.

For the purposes of SR 4.8.1.1.2.a.5, 4.8.1.1.2.b.3.b and 4.8.1.1.2.f testing, the diesel generators are started from standby conditions. Standby conditions for a diesel generator mean that the diesel engine coolant and oil are being continuously circulated and temperatures are being maintained consistent with manufacturer recommendations.

The frequency of 64.4 Hz specified in Surveillance Requirement 4.8.1.1.2.b.2 corresponds to 552 rpm.

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on minimum boron concentration (2000 ppm) ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. The limitation on K_{eff} of no greater than 0.95 which includes a conservative allowance for uncertainties, is sufficient to prevent reactor criticality during refueling operations.

Isolating all reactor water makeup paths from unborated water sources precludes the possibility of an uncontrolled boron dilution of the filled portions of the Reactor Coolant System. This limitation is consistent with the initial conditions assumed in the accident analyses for MODE 6.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core when performing those evolutions with the potential to initiate criticality. Suitable detectors used in place of primary source range neutron flux monitors N-31 and N-32 are recognized as alternate detectors. Alternate detectors may be used in place of primary source range neutron flux monitors as long as the required indication is provided. Since installation of the upper internals does not involve movement of fuel or a significant positive reactivity addition to the core, one primary or alternate source range neutron flux monitor with continuous visual indication in the control room provides adequate neutron flux monitoring capability during this evolution.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The LCO is applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) to occur. Therefore, the requirements of this Specification may be required to limit leakage of radioactive material within the containment to the environment. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposures that are within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit leakage to the environment. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

The requirements on containment penetration closure limit leakage of radioactive material within containment to the environment may be required to ensure compliance with 10 CFR 50.67 limits. The requirements on operation of the SLCRS ensure that radioactive material released through open containment penetrations, as the result of a fuel handling accident (FHA) within containment involving recently irradiated fuel, will be filtered through HEPA filters and charcoal absorbers prior to discharge to the atmosphere. These requirements are sufficient to restrict radioactive material release from the number of fuel rods assumed to be ruptured in the FHA analysis based upon the lack of containment pressurization potential while moving fuel assemblies within containment.

Except for the containment purge and exhaust penetrations and open penetrations that meet the requirements of this specification, all containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated on at least one side. Penetration closure may be achieved by an isolation valve, blind flange, manual valve, or functional equivalent. Functional equivalent isolation ensures releases from the containment are prevented for credible accident scenarios. The isolation techniques must be approved by an engineering evaluation and may include use of a material that can provide a temporary, pressure tight seal capable of maintaining the integrity of the penetration to restrict the release of radioactive material from a FHA occurring inside containment.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

An OPERABLE filtered SLCRS train is required to include only those portions of the system that are necessary to ensure that a filtered exhaust path is available from the required plant areas to HEPA and charcoal adsorbers and then to the elevated release point on top of the containment building. As a minimum, an OPERABLE filtered SLCRS train includes one OPERABLE filtered exhaust fan. If two filtered SLCRS fans are utilized to satisfy the requirements of SR 4.9.4.4, then in order to satisfy the LCO requirements, each fan must be in operation and be OPERABLE with both a normal and emergency power source available.

LCO 3.9.4 requires that a minimum of one train of filtered SLCRS be operating and OPERABLE. A single OPERABLE train of filtered SLCRS that is operating ensures that no undetected failures preventing system operation will occur, and that any active failure will be readily detected. Therefore, the LCO requirement to have an OPERABLE and operating train of filtered SLCRS is sufficient to mitigate the consequences of a FHA within the containment.

The personnel air lock (PAL) area is the plant area where the outer PAL door is located.

A PAL door is considered capable of being closed when the following criteria are satisfied:

1. Administrative procedures have been established to:

    a. ensure that appropriate personnel are aware of the Open status of the containment during movement of fuel within the containment;

    b. ensure that an open air lock is capable of rapid closure (i.e., ≤ 30 minutes), with quick disconnect and removal capability for hoses, cables, ramps, and door seal protective covers; and

    c. ensure that an individual is designated and available to close the air lock following the evacuation that would occur in the event of an accident.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

A containment penetration is considered capable of being closed when the following criteria are satisfied:

1. Administrative procedures have been established to:

   a. ensure that appropriate personnel are aware of the Open status of the containment during movement of fuel within the containment;

   b. ensure that the containment penetration is capable of rapid closure (i.e., ≤ 30 minutes) by closing an isolation valve, manual valve, blind flange, or approved functional equivalent; and

   c. ensure that an individual is designated and available to close the containment penetration.

LCO 3.9.4.b.4 requires that SR 4.9.4.4 has been satisfied with both PAL doors open. This requirement is necessary to ensure that the opening of PAL will not adversely affect the ability of filtered SLCRS to maintain the PAL area at a negative pressure. LCO 3.9.4.c.1.b permits a containment penetration (excluding the PAL) to be open if the maximum equivalent containment penetration opening size is not exceeded. This requirement is necessary to ensure that the opening of a containment penetration will not adversely affect the ability of filtered SLCRS to maintain the associated plant area at a negative pressure. SR 4.9.4.4 establishes the maximum equivalent containment penetration opening size for each applicable plant area.

For the purpose of satisfying SR 4.9.4.1, area flow rate is not required to be verified. Each flow path must be verified to be aligned in the correct manner to ensure that the area is being exhausted to at least one OPERABLE filtered SLCRS train. In addition, the term "open containment penetrations" as stated in SR 4.9.4.1 is defined as a penetration that provides direct access from the containment atmosphere to the outside atmosphere. The 12 hour surveillance specified in SR 4.9.4.1.b does not pertain to the containment purge and exhaust containment penetrations provided that containment air is being exhausted through the exhaust penetration to filtered SLCRS. For the purpose of satisfying the requirements of SR 4.9.4.1, it is acceptable for the PAL area to have an observed air flow through the PAL into containment and thereby be considered to be exhausting to filtered SLCRS provided the following

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

conditions have been met: 1) SR 4.9.4.4 has demonstrated that with both air lock doors open and the purge and exhaust containment penetrations closed, the PAL area is maintained negative with respect to atmosphere pressure by the PAL area filtered SLCRS flow path. 2) The PAL area is verified to be serviced (i.e., flow path alignment) by filtered SLCRS from a ventilation flow path other than containment.

SR 4.9.4.4 verifies the required plant area(s) integrity and the ability of filtered SLCRS to maintain the area(s) at a negative pressure with open containment penetrations. The ability of filtered SLCRS to maintain a negative pressure in the required plant area(s) provides assurance that radioactivity that may be released through open containment penetrations, due to a fuel handling accident occurring inside containment, is collected and filtered for iodine removal prior to discharge to the atmosphere. The negative pressure with respect to atmosphere includes the verification of negative pressure of ≤ -0.125 inches of water gauge with respect to adjacent plant areas (excluding containment) that are not being serviced by filtered SLCRS as well as environmental atmosphere pressure. The purge and exhaust containment penetrations need to be isolated during performance of SR 4.9.4.4. The isolation of these containment penetrations is necessary to accurately reflect the plant conditions following a fuel handling accident inside containment. These containment penetrations will be automatically isolated by a high radiation signal from the containment purge exhaust radiation monitors. Therefore, SR 4.9.4.4 can not be performed with this additional SLCRS filtered flow path in service. SR 4.9.4.4 requires that the maximum equivalent containment penetration opening size for each applicable plant area be established. This requirement is necessary to ensure that the opening of containment penetrations will not adversely affect the ability of filtered SLCRS to maintain the associated plant area at a negative pressure. The establishment of the maximum equivalent containment penetration opening size for each applicable plant area involves the measurement of the filtered SLCRS exhaust flow rate and the negative pressure for the applicable plant area. Utilizing this data, a maximum equivalent containment penetration opening size can be calculated. The available margin between the measured area negative pressure and the minimum required area negative pressure is utilized to allow opening of containment penetrations. For the PAL area, the establishment of the maximum equivalent containment penetration opening size is accomplished by performing SR 4.9.4.4 with both doors of the PAL open. If the PAL is the only containment penetration in the PAL area that will be opened, then a calculation of the maximum equivalent containment penetration

opening size is not required. The performance of SR 4.9.4.4 with both doors of the PAL open establishes the maximum equivalent containment penetration opening size for the PAL area. The area where the open containment penetration is located may be defined as containing more than one room. For example, if two rooms are connected via an open doorway, the area can be defined as both rooms provided that this area is being exhausted to filtered SLCRS. All doors to this area are required to be closed except as noted in Footnote (1). This footnote provides an exception to the requirement that all doors to the area are closed to allow for entry and exit. This footnote is not intended to permit doors to be blocked opened.

3/4.9.5 COMMUNICATIONS

The requirements for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

3/4.9.6 MANIPULATOR CRANE OPERABILITY

The OPERABILITY requirements for the manipulator cranes ensure that: 1) manipulator cranes will be used for movement of control rods and fuel assemblies; 2) each crane has sufficient load capacity to lift a control rod or fuel assembly; and 3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 (This Specification is not used.)

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that 1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and 2) sufficient coolant circulation is maintained throughout the reactor core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

The LCO is applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) to occur. Therefore, the requirements of this Specification may be required to limit leakage of radioactive material within the containment to the environment. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposures that are within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit leakage to the environment. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

THE OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The integrity of the containment penetrations of this system may be required to meet 10 CFR 50.67 requirements in the event of a fuel handling accident inside containment involving recently irradiated fuel. The piping that connects this system to filtered SLCRS is not safety related and, therefore, can not be relied upon to mitigate the radiological effects of a fuel handling accident inside containment.

3/4.9.10 AND 3/4.9.11 WATER LEVEL - REACTOR VESSEL AND STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99.5% of the assumed iodine gap activity (99% for iodine 131 and 5% for other iodines) released from the number of fuel rods assumed to be ruptured in the fuel handling accident analysis. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.12 FUEL BUILDING VENTILATION SYSTEM

The LCO is applicable during movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies because there is a potential for the limiting fuel handling accident (FHA) to occur. Therefore, the requirements of this Specification may be required to limit leakage of radioactive material within the fuel building to the environment. A FHA which does not involve recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) will result in radiation exposures that are within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit leakage to the environment. The 100 hour limit is based on the current radiological analysis for a FHA which assumes a decay time of 100 hours. LCO 3.9.3 prohibits irradiated fuel movement unless 150 hours of decay has occurred, which is conservative with respect to the assumptions used in the accident analyses. Therefore, this specification will not be applicable unless the decay time in Specification 3.9.3 and the time assumed in the radiological analysis for a FHA are reduced to below 100 hours.

The limitations on the storage pool ventilation system ensure that all radioactive material released, as a result of a fuel handling accident (FHA) within the fuel building involving recently irradiated fuel, will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The spent fuel pool area ventilation system is non-safety related and only recirculates air through the fuel building. The fuel building portion of the SLCRS is safety related and continuously filters the fuel building exhaust air. This maintains a negative pressure in the fuel building.

3/4.9.13 (This Specification is not used.)

3/4.9.14 FUEL STORAGE - SPENT FUEL STORAGE POOL

The requirements for fuel storage in the spent fuel pool ensure that: (1) the spent fuel pool will remain subcritical during fuel storage; and (2) a uniform boron concentration is maintained in the water volume in the spent fuel pool to provide negative reactivity for postulated accident conditions under the guidelines of ANSI 16.1-1975. The value of 0.95 or less for K_{eff} which includes all uncertainties at the 95/95 probability/confidence level is the acceptance criteria for fuel storage in the spent fuel pool.

Verification that peak fuel rod burnup is less than 60 GWD/MTU is provided in the reload evaluation report associated with each fuel cycle.

The Action Statement applicable to fuel storage in the spent fuel pool ensures that: (1) the spent fuel pool is protected from distortion in the fuel storage pattern that could result in a critical array during the movement of fuel; and (2) the boron concentration is maintained at ≥ 1050 ppm (this includes a 50 ppm conservative allowance for uncertainties) during all actions involving movement of fuel in the spent fuel pool.

The Surveillance Requirements applicable to fuel storage in the spent fuel pool ensure that: (1) the fuel assemblies satisfy the analyzed U-235 enrichment limits or an analysis has been performed and it was determined that K_{eff} is ≤ 0.95; and (2) the boron concentration meets the 1050 ppm limit.