

DEFINITIONS

CORE ALTERATION

1.7 CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:

- a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement), and
- b. Control rod movement, provided there are no fuel assemblies in the associated core cell.

Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE MAXIMUM FRACTION OF LIMITING POWER DENSITY

1.8 The CORE MAXIMUM FRACTION OF LIMITING POWER DENSITY (CMFLPD) shall be highest value of the FLPD which exists in the core.

CORE OPERATING LIMITS REPORT

1.9 The CORE OPERATING LIMITS REPORT is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.9. Plant operation within these limits is addressed in individual specifications.

CRITICAL POWER RATIO

1.10 The CRITICAL POWER RATIO (CPR) shall be the ratio of that power in the assembly which is calculated by application of the applicable NRC-approved critical power correlation to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

DOSE EQUIVALENT I-131

1.11 DOSE EQUIVALENT I-131 shall be that concentration of I-131, microcuries per gram, which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."

\bar{E} -AVERAGE DISINTEGRATION ENERGY

1.12 \bar{E} shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration, in MeV, for isotopes, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

DEFINITIONS

EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME

1.13 The EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS actuation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function, i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc. Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME

1.14 The END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME shall be that time interval to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker from initial movement of the associated:

- a. Turbine stop valves, and
- b. Turbine control valves.

The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

FRACTION OF LIMITING POWER DENSITY

1.15 The FRACTION OF LIMITING POWER DENSITY (FLPD) shall be the LHGR existing at a given location divided by the specified LHGR limit for that bundle type.

FRACTION OF RATED THERMAL POWER

1.16 The FRACTION OF RATED THERMAL POWER (FRTP) shall be the measured THERMAL POWER divided by the RATED THERMAL POWER.

FREQUENCY NOTATION

1.17 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

IDENTIFIED LEAKAGE

1.18 IDENTIFIED LEAKAGE shall be:

- a. Leakage into collection systems, such as pump seal or valve packing leaks, that is captured and conducted to a sump or collecting tank, or
- b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of the leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE.

ISOLATION SYSTEM RESPONSE TIME

1.19 The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation actuation setpoint at the channel sensor until the isolation valves travel to their required positions. Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

DEFINITIONS

LIMITING CONTROL ROD PATTERN

1.20 A LIMITING CONTROL ROD PATTERN shall be a pattern which results in the core being on a thermal hydraulic limit, i.e., operating on a limiting value for APLHGR, LHGR, or MCPR.

LINEAR HEAT GENERATION RATE

1.21 LINEAR HEAT GENERATION RATE (LHGR) shall be the heat generation per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

LOGIC SYSTEM FUNCTIONAL TEST

1.22 A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components, i.e., all relays and contacts, all trip units, solid state logic elements, etc, of a logic circuit, from sensor through and including the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by any series of sequential, overlapping or total system steps such that the entire logic system is tested.

MAXIMUM FRACTION OF LIMITING POWER DENSITY

1.23 The MAXIMUM FRACTION OF LIMITING POWER DENSITY (MFLPD) shall be highest value of the FLPD which exists in the core.

MEMBER(S) OF THE PUBLIC

1.24 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

MINIMUM CRITICAL POWER RATIO

1.25 The MINIMUM CRITICAL POWER RATIO (MCPR) shall be the smallest CPR which exists in the core.

OFF-GAS RADWASTE TREATMENT SYSTEM

1.26 An OFF-GAS RADWASTE TREATMENT SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting reactor coolant system offgases from the main condenser evacuation system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

OFFSITE DOSE CALCULATION MANUAL

1.27 The OFFSITE DOSE CALCULATIONAL MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating Report and the Annual Radioactive Effluent Release Report required by Specifications 6.9.1.6 and 6.9.1.7.

TABLE 3.3.2-1 (Continued)

NOTES

- * When handling recently irradiated fuel in the secondary containment and during operations with a potential for draining the reactor vessel.
- ** When any turbine stop valve is greater than 90% open and/or when the key-locked bypass switch is in the Norm position.
- # Refer to Specification 3.1.5 for applicability.
- ## The hydrogen water chemistry (HWC) system shall not be placed in service until reactor power reaches 20% of RATED THERMAL POWER. After reaching 20% of RATED THERMAL POWER, and prior to operating the HWC system, the normal full power background radiation level and associated trip setpoints may be increased to levels previously measured during full power operation with hydrogen injection. Prior to decreasing below 20% of RATED THERMAL POWER and after the HWC system has been shutoff, the background level and associated setpoint shall be returned to the normal full power values. If a power reduction event occurs so that the reactor power is below 20% of RATED THERMAL POWER without the required setpoint change, control rod motion shall be suspended (except for scram or other emergency actions) until the necessary setpoint adjustment is made.
- (a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided at least one other OPERABLE channel in the same trip system is monitoring that parameter.
- (b) Also trips and isolates the mechanical vacuum pumps.
- (c) Also starts the Filtration, Recirculation and Ventilation System (FRVS).
- (d) Refer to Table 3.3.2-1 table notation for the listing of which valves in an actuation group are closed by a particular isolation signal. Refer to Tables 3.6.3-1 and 3.6.5.2-1 for the listings of all valves within an actuation group.
- (e) Sensors arranged per valve group, not per trip system.
- (f) Closes only RWCU system isolation valve(s) HV-F001 and HV-F004.
- (g) Requires system steam supply pressure-low coincident with drywell pressure-high to close turbine exhaust vacuum breaker valves.
- (h) Manual isolation closes HV-F008 only, and only following manual or automatic initiation of the RCIC system.
- (i) Manual isolation closes HV-F003 and HV-F042 only, and only following manual or automatic initiation of the HPCI system.
- (j) Trip functions common to RPS instrumentation.

TABLE 4.3.2.1-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
<u>HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION (Continued)</u>				
h. HPCI Torus Compartment Temperature - High	NA	Q	R	1, 2, 3
i. Drywell Pressure - High	NA	Q	R	1, 2, 3
j. Manual Initiation	NA	R	NA	1, 2, 3
<u>7. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>				
a. Reactor Vessel Water Level - Low, Level 3	S	Q	R	1, 2, 3
b. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	NA	Q	R	1, 2, 3
c. Manual Initiation	NA	Q ^(a)	NA	1, 2, 3

* When handling recently irradiated fuel in the secondary containment and during operations with a potential for draining the reactor vessel.

** When any turbine stop valve is greater than 90% open and/or when the key-locked bypass switch is in the Norm position.

Refer to Specification 3.1.5 for applicability.

(a) Manual initiation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual initiation shall receive a CHANNEL FUNCTIONAL TEST at least once per 92 days as part of circuitry required to be tested for automatic system isolation.

(b) Each train or logic channel shall be tested at least every other 92 days.

CONTAINMENT SYSTEMS

3/4.6.5 SECONDARY CONTAINMENT

SECONDARY CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3 and *.

ACTION:

Without SECONDARY CONTAINMENT INTEGRITY:

- a. In OPERATIONAL CONDITION 1, 2 or 3, restore SECONDARY CONTAINMENT INTEGRITY within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. In Operational Condition *, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be demonstrated by:

- a. Verifying at least once per 24 hours that the reactor building is at a negative pressure.
- b. Verifying at least once per 31 days that:
 1. All secondary containment equipment hatches and blowout panels are closed and sealed.
 2.
 - a. For double door arrangements, at least one door in each access to the secondary containment is closed.
 - b. For single door arrangements, the door in each access to the secondary containment is closed except for routine entry and exit.
 3. All secondary containment penetrations not capable of being closed by OPERABLE secondary containment automatic isolation dampers/valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic dampers/valves secured in position.
- c. At least once per 18 months:
 1. Verifying that four filtration recirculation and ventilation system (FRVS) recirculation units and one ventilation unit of the filtration recirculation and ventilation system will draw down the secondary containment to greater than or equal to 0.25 inches of vacuum water gauge in less than or equal to 375 seconds, and

*When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT AUTOMATIC ISOLATION DAMPERS

LIMITING CONDITION FOR OPERATION

3.6.5.2 The secondary containment ventilation system (RBVS) automatic isolation dampers shown in Table 3.6.5.2-1 shall be OPERABLE with isolation times less than or equal to the times shown in Table 3.6.5.2-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3 and *.

ACTION:

With one or more of the secondary containment ventilation system automatic isolation dampers shown in Table 3.6.5.2-1 inoperable, maintain at least one isolation damper OPERABLE in each affected penetration that is open and within 8 hours either:

- a. Restore the inoperable dampers to OPERABLE status, or
- b. Isolate each affected penetration by use of at least one deactivated damper secured in the isolation position, or
- c. Isolate each affected penetration by use of at least one closed manual valve or blind flange.

Otherwise, in OPERATIONAL CONDITION 1, 2 or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Otherwise, in Operational Condition *, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.5.2 Each secondary containment ventilation system automatic isolation damper shown in Table 3.6.5.2-1 shall be demonstrated OPERABLE:

- a. Prior to returning the damper to service after maintenance, repair or replacement work is performed on the damper or its associated actuator, control or power circuit by cycling the damper through at least one complete cycle of full travel and verifying the specified isolation time.
- b. During COLD SHUTDOWN or REFUELING at least once per 18 months by verifying that on a containment isolation test signal each isolation damper actuates to its isolation position.
- c. By verifying the isolation time to be within its limit at least once per 92 days.

* When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

CONTAINMENT SYSTEMS

3.6.5.3 FILTRATION, RECIRCULATION AND VENTILATION SYSTEM (FRVS) FRVS VENTILATION SUBSYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.3.1 Two FRVS ventilation units shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3 and *.

ACTION:

- a. With one of the above required FRVS ventilation units inoperable, restore the inoperable unit to OPERABLE status within 7 days, or:
 1. In OPERATIONAL CONDITION 1, 2 or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 2. In Operational Condition *, place the OPERABLE FRVS ventilation unit in operation or suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.
- b. With both ventilation units inoperable in Operational Condition *, suspend handling of recently irradiated fuel in the secondary containment or operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3. are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.5.3.1 Each of the two ventilation units shall be demonstrated OPERABLE:

- a. At least once per 14 days by verifying that the water seal bucket traps have a water seal and making up any evaporative losses by filling the traps to the overflow.
- b. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the subsystem operates for at least 15 minutes.

*When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months or upon determination** that the HEPA filters or charcoal adsorbent could have been damaged by structural maintenance or adversely affected by any chemicals, fumes or foreign materials (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the subsystem by:
1. Verifying that the subsystem satisfies the in-place penetration testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rates are 9,000 cfm \pm 10% for each FRVS ventilation unit.
 2. Verifying within 31 days after removal from the FRVS ventilation units, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity 95%.
 3. Verifying a subsystem flow rate of 9,000 cfm \pm 10% for each FRVS ventilation unit during system operation when tested in accordance with ANSI N510-1980.
- d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the FRVS ventilation units, that a laboratory analysis of a representative carbon sample, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows a methyl iodide penetration less than 5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 95%.

**This determination shall consider the maintenance performed and/or the type, quantity, length of contact time, known effects and previous accumulation history for all contaminants which could reduce the system performance to less than that verified by the acceptance criteria in items c.1 through c.3 below.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 18 months by:
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 5 inches Water Gauge in the ventilation unit while operating the filter train at a flow rate of 9,000 cfm \pm 10% for each FRVS ventilation unit.
 - 2. Verifying that the filter train starts and isolation dampers open on each of the following test signals:
 - a. Manual initiation from the control room, and
 - b. Simulated automatic initiation signal.

- f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter bank satisfies the in-place penetration testing acceptance criteria of less than 0.05% in accordance with Regulatory Position C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2 March 1978, while operating the system at a flow rate of 9,000 cfm \pm 10% for each FRVS ventilation unit.

- g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorber bank satisfies the in-place penetration testing acceptance criteria of less than 0.05% in accordance with Regulatory Position C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 9,000 cfm \pm 10% for each FRVS ventilation unit.

CONTAINMENT SYSTEMS

3.6.5.3 FILTRATION, RECIRCULATION AND VENTILATION SYSTEM (FRVS)
FRVS RECIRCULATION SUBSYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.3.2 Six FRVS recirculation units shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3 and *.

ACTION:

- a. With one or two of the above required FRVS recirculation units inoperable, restore all the inoperable unit(s) to OPERABLE status within 7 days, or:
 1. In OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 2. In Operational Condition *, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.
- b. With three or more of the above required FRVS recirculation units inoperable in Operational Condition *, suspend handling of recently irradiated fuel in the secondary containment or operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.
- c. With three or more of the above required FRVS recirculation units inoperable in OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.3.2 Each of the six FRVS recirculation units shall be demonstrated OPERABLE:

- a. At least once per 14 days by verifying that the water seal bucket traps have a water seal and making up any evaporative losses by filling the traps to the overflow.
- b. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and verifying that the subsystem operates for at least 15 minutes.

*When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months or upon determination** that the HEPA filters could have been damaged by structural maintenance or adversely affected by any foreign materials (1) after any structural maintenance on the HEPA filters or housings by:
 - 1. Verifying that the subsystem satisfies the in-place penetration testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rates are 30,000 cfm \pm 10% for each FRVS recirculation unit.

 - 2. Verifying a subsystem flow rate of 30,000 cfm \pm 10% for each FRVS recirculation unit during system operation when tested in accordance with ANSI N510-1980.

- d. not used

**This determination shall consider the maintenance performed and/or the type, quantity, length of contact time, known effects and previous accumulation history for all contaminants which could reduce the system performance to less than that verified by the acceptance criteria in items c.1 and c.2 below.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- e. At least once per 18 months by:
 - 1. Verifying that the pressure drop across the exhaust duct is less than 8 inches Water Gauge in the recirculation filter train while operating the filter train at a flow rate of 30,000 cfm \pm 10% for each FRVS recirculation unit.
 - 2. Verifying that the filter train starts and isolation dampers open on each of the following test signals:
 - a. Manual initiation from the control room, and
 - b. Simulated automatic initiation signal.

- f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter bank satisfies the inplace penetration testing acceptance criteria of less than 0.05% in accordance with Regulatory Position C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2 March 1978, while operating the system at a flow rate of 30,000 cfm \pm 10% for each FRVS recirculation unit.

3/4.7 PLANT SYSTEMS
3/4.7.1 SERVICE WATER SYSTEMS
SAFETY AUXILIARIES COOLING SYSTEM

LIMITING CONDITION FOR OPERATION

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3.7.1.1 At least the following independent safety auxiliaries cooling system (SACS) subsystems, with each subsystem comprised of:

- a. Two OPERABLE SACS pumps, and
- b. An OPERABLE flow path consisting of a closed loop through the SACS heat exchangers and SACS pumps and to associated safety related equipment

shall be OPERABLE:

- a. In OPERATIONAL CONDITION 1, 2 and 3, two subsystems.
- b. In OPERATIONAL CONDITION 4, 5, and ** the subsystems associated with systems and components required OPERABLE by Specification 3.4.9.2, 3.5.2, 3.8.1.2, 3.9.11.1 and 3.9.11.2.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5, and **.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2, or 3:
 - 1. a. With one SACS pump inoperable, and if continued plant operation is permitted by LCO 3.7.1.3, restore the inoperable pump to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.*** If the condition specified by *** can not be met, be in at least HOT SHUTDOWN within the next 72 hours and in COLD SHUTDOWN within the following 24 hours.
 - b. With one SACS heat exchanger inoperable, and if continued plant operation is permitted by LCO 3.7.1.3, restore the heat exchanger to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN with the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- 2. With one SACS subsystem otherwise inoperable, and if continued plant operation is permitted by LCO 3.7.1.3, realign at least one of the affected diesel generators to the OPERABLE SACS subsystem within 2 hours, within 6 hours realign other affected SACS supported loads required to support plant operation for at least 72 hours, and restore the inoperable subsystem to OPERABLE status with at least one OPERABLE pump and heat exchanger within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.***

** When handling recently irradiated fuel in the secondary containment.

*** Two diesel generators and two service water pumps associated with the unaffected SACS loop must be OPERABLE.

PLANT SYSTEMS
STATION SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

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3.7.1.2 At least the following independent station service water system loops, with each loop comprised of:

- a. Two OPERABLE station service water pumps, and
- b. An OPERABLE flow path capable of taking suction from the Delaware River (ultimate heat sink) and transferring the water to the SACS heat exchangers,

shall be OPERABLE:

- a. In OPERATIONAL CONDITION 1, 2 and 3, two loops.
- b. In OPERATIONAL CONDITION 4, 5 and *, one loop.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5 and *.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2, or 3:
 - 1. With one station service water pump inoperable, and if continued plant operation is permitted by LCO 3.7.1.3, restore the inoperable pump to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.** If the condition specified by ** can not be met, be in at least HOT SHUTDOWN within the next 72 hours and in COLD SHUTDOWN within the following 24 hours.
 - 2. With one station service water pump in each loop inoperable, and if continued plant operation is permitted by LCO 3.7.1.3, restore at least one inoperable pump to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.***
 - 3. With one station service water system loop otherwise inoperable, and if continued plant operation is permitted by LCO 3.7.1.3, assess the operability of the associated SACS loop and take the ACTION specified in LCO 3.7.1.1, Action Statement a.2, if required, and restore the inoperable station service water system loop to OPERABLE status with at least one OPERABLE pump within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.**

* When handling recently irradiated fuel in the secondary containment.

** Two diesel generators and two SACS pumps associated with the unaffected service water loop must be OPERABLE.

*** Two diesel generators and SACS pumps associated with the required OPERABLE service water pumps and all SACS heat exchangers must be OPERABLE.

PLANT SYSTEMS

ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

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3.7.1.3 The ultimate heat sink (Delaware River) shall be OPERABLE with:

- a. A minimum river water level at or above elevation -9'0 Mean Sea Level, USGS datum (80'0 PSE&G datum), and
- b. An average river water temperature of less than or equal to 85.0°F.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5 and *.

ACTION:

With the river water temperature in excess of 85.0°F, continued plant operation is permitted provided that both emergency discharge valves are open and emergency discharge pathways are available. With the river water temperature in excess of 88.0°F, continued plant operation is permitted provided that all of the following additional conditions are satisfied: ultimate heat sink temperature is at or below 89.0°F, all SSWS pumps are OPERABLE, all SACS pumps are OPERABLE, all EDGs are OPERABLE and the SACS loops have no cross-connected loads (unless they are automatically isolated during a LOP and/or LOCA); otherwise, with the requirements of the above specification not satisfied:

- a. In OPERATIONAL CONDITIONS 1, 2 or 3, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. In OPERATIONAL CONDITIONS 4 or 5, declare the SACS system and the station service water system inoperable and take the ACTION required by Specification 3.7.1.1 and 3.7.1.2.
- c. In Operational Condition *, declare the plant service water system inoperable and take the ACTION required by Specification 3.7.1.2. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

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4.7.1.3 The ultimate heat sink shall be determined OPERABLE:

- a. By verifying the river water level to be greater than or equal to the minimum limit at least once per 24 hours.
- b. By verifying river water temperature to be within its limit:
 - 1) at least once per 24 hours when the river water temperature is less than or equal to 82°F.
 - 2) at least once per 2 hours when the river water temperature is greater than 82°F.

* When handling recently irradiated fuel in the secondary containment.

PLANT SYSTEMS

3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

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3.7.2 Two independent control room emergency filtration system subsystems shall be OPERABLE with each subsystem consisting of:

- a) One control room supply unit,
- b) One filter train, and
- c) One control room return air fan.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and *.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2 or 3 with one control room emergency filtration subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. In OPERATIONAL CONDITION 4 or *:
 - 1. With one control room emergency filtration subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or initiate and maintain operation of the OPERABLE subsystem in the pressurization/recirculation mode of operation.
 - 2. With both control room emergency filtration subsystems inoperable, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.
- c. The provisions of Specification 3.0.3 are not applicable in Operational Condition *.

SURVEILLANCE REQUIREMENTS

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4.7.2 Each control room emergency filtration subsystem shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 85°F.
- b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, the control area chilled water pump, flow

*When recently irradiated fuel is being handled in the secondary containment.

'This does not require starting the non-running control emergency filtration subsystem.

ELECTRICAL POWER SYSTEMS

A.C. SOURCES - 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. Two diesel generators, one of which shall be diesel generator A or diesel generator B, each with:
 1. A separate fuel oil day tank containing a minimum of 360 gallons of fuel.
 2. A fuel storage system consisting of two storage tanks containing a minimum of 44,800 gallons of fuel.
 3. A separate fuel transfer pump for each storage tank.

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and *.

ACTION:

- a. With less than the above required A.C. electrical power sources OPERABLE, suspend handling of recently irradiated fuel in the secondary containment, operations with a potential for draining the reactor vessel and crane operations over the spent fuel storage pool when fuel assemblies are stored therein. In addition, when in OPERATIONAL CONDITION 5 with the water level less than 22'-2" above the reactor pressure vessel flange, immediately initiate corrective action to restore the required power sources to OPERABLE status as soon as practical.
- b. The provisions of Specification 3.0.3 are not applicable.
- c. With one fuel oil transfer pump inoperable, realign the flowpath of the affected tank to the tank with the remaining operable fuel oil transfer pump within 48 hours and restore the inoperable transfer pump to OPERABLE status within 14 days, otherwise declare the affected emergency diesel generator (EDG) inoperable. This variance may be applied to only one EDG at a time.

SURVEILLANCE REQUIREMENTS

4.8.1.2 At least the above required A.C. electrical power sources shall be demonstrated OPERABLE per Surveillance Requirements 4.8.1.1.1, 4.8.1.1.2, and 4.8.1.1.3, except for the requirement of 4.8.1.1.2.a.5.

* When handling recently irradiated fuel in the secondary containment.

ELECTRICAL POWER SYSTEMS

D.C. SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, two of the following four channels of the D.C. electrical power sources, one of which shall be channel A or channel B, shall be OPERABLE with:

- a. Channel A, consisting of:
 1. 125 volt battery 1AD411
 2. 125 volt full capacity charger# 1AD413 or 1AD414
- b. Channel B, consisting of:
 1. 125 volt battery 1BD411
 2. 125 volt full capacity charger# 1BD413 or 1BD414.
- c. Channel C, consisting of:
 1. 125 volt battery 1CD411
 2. 125 volt full capacity charger# 1CD413 or 1CD414
 3. 125 volt battery 1CD447
 4. 125 volt full capacity charger 1CD444
- d. Channel D, consisting of:
 1. 125 volt battery 1DD411
 2. 125 volt full capacity charger# 1DD413 or 1DD414
 3. 125 volt battery 1DD447
 4. 125 volt full capacity charger 1DD444

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and *.

ACTION:

- a. With less than two channels of the above required D.C. electrical power sources OPERABLE, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.2.2 At least the above required battery and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.1.

*When handling recently irradiated fuel in the secondary containment.
#Only one full capacity charger per battery is required for the channel to be OPERABLE.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and *.

ACTION:

- a. With less than two channels of the above required A.C. distribution system energized, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.
- b. With less than two channels of the above required D.C. distribution system energized, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.8.3.2 At least the above required power distribution system channels shall be determined energized at least once per 7 days by verifying correct breaker/switch alignment and voltage on the busses/MCCs/panels.

*When handling recently irradiated fuel in the secondary containment.

INSTRUMENTATION

BASES

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

the refueling floor due to a fuel handling accident. When Exhaust Radiation - High is detected, secondary containment isolation and actuation of the FRVS are initiated to limit the release of fission products as assumed in the UFSAR safety analyses (Ref. 4).

The Exhaust Radiation - High signals are initiated from radiation detectors that are located on the ventilation exhaust ducts coming from the reactor building and the refueling floor zones, respectively. Three channels of Reactor Building Exhaust Radiation - High Function and three channels of Refueling Floor Exhaust Radiation - High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Refueling Floor and Reactor Building Exhaust Radiation - High Functions are required to be OPERABLE in OPERATIONAL CONDITIONS 1, 2, and 3 where considerable energy exists; thus, there is a probability of pipe breaks resulting in significant releases of radioactive steam and gas. In OPERATIONAL CONDITIONS 4 and 5, the probability and consequences of these events are low due to the RCS pressure and temperature limitations of these OPERATIONAL CONDITIONS; thus, these Functions are not required. In addition, the Functions are also required to be OPERABLE during OPDRVs, when handling recently irradiated fuel in the secondary containment, because the capability of detecting radiation releases due to fuel failures (due to fuel uncover or dropped fuel assemblies) must be provided to ensure that offsite dose limits are not exceeded.

The valve groups actuated by this Function are listed in Table 3.3.2-1.

2.e. Manual Initiation

The Manual Initiation for secondary containment isolation can be performed by manually initiating a primary containment isolation. There is no specific UFSAR safety analysis that takes credit for this Function. It is retained for the overall redundancy and diversity of the secondary containment isolation instrumentation as required by the NRC approved licensing basis.

There are four push buttons for the logic, one manual initiation push button per PCIS channel. There is no Allowable Value for this Function, since the channels are mechanically actuated based solely on the position of the push buttons.

Four channels of Manual Initiation Function are available and are required to be OPERABLE in OPERATIONAL CONDITIONS 1, 2, and 3 and during OPDRVs, when handling recently irradiated fuel in the secondary containment. These are the OPERATIONAL CONDITIONS and other specified conditions in which the Secondary Containment Isolation automatic Functions are required to be OPERABLE.

CONTAINMENT SYSTEMS

BASES

Each vacuum breaker must be cycled to ensure that it opens properly to perform its design function and returns to its fully closed position. This ensures that the safety analysis assumptions are valid. The 31 day Frequency of this SR is more conservative than the Inservice Testing Program requirements.

Demonstration of vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.25 psid is valid. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. For this unit, the 18 month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The Reactor Building and associated structures provide secondary containment during normal operation when the drywell is sealed and in service. At other times the drywell may be open and, when required, secondary containment integrity is specified.

Establishing and maintaining a 0.25 inch water gage vacuum in the reactor building with the filtration recirculation and ventilation system (FRVS) once per 18 months, along with the surveillance of the doors, hatches, dampers and valves, is adequate to ensure that there are no violations of the integrity of the secondary containment.

In MODES 4 and 5, the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining secondary containment OPERABLE is not required in MODE 4 or 5 to ensure a control volume, except for other situations for which significant releases of radioactive material can be postulated, such as during movement of recently irradiated fuel assemblies in the secondary containment or during operations with a potential for draining the reactor vessel (OPDRVs). Due to radioactive decay, handling of fuel only requires OPERABILITY of secondary containment when fuel being handled is recently irradiated, i.e., fuel that has occupied part of the critical reactor core within the previous 24 hours.

During handling of fuel and CORE ALTERATIONS, secondary containment and FRVS actuation is not required. However, building ventilation will be operating during fuel handling and CORE ALTERATIONS and will be capable of drawing air into the building and exhausting through a monitored pathway. To reduce doses even further below that provided by 24 hours of natural decay, a single normal or contingency method to promptly close secondary containment penetrations is provided in accordance with RG 1.183. Such prompt methods need not completely block the penetration or be capable of resisting pressure. The purpose of the "prompt methods" (defined as within 30 minutes) is to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored. These contingencies are to be utilized after a postulated fuel handling accident has occurred to reduce doses even further below that provided by the natural decay.