3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, action shall be initiated within 1 hour to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual Specifications.

3.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted. This provision shall not prevent passage through OPERATIONAL MODES as required to comply with ACTION statements.

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied, within 2 hours action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it as applicable in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours.

This Specification is not applicable in MODES 5 or 6.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

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LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that:

1. All penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except those valves that may be opened under administrative controls per Specification 3.6.3.1, and

2. All equipment hatches are closed and sealed.

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3

*Except valves, blind flanges, and deactivated automatic valves which are located inside the Shield Building (including the annulus and containment) and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that verification of these penetrations being closed need not be performed more often than once per 92 days.

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

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LIMITING CONDITION FOR OPERATION

3.6.1.3 Each containment air lock shall be OPERABLE with:

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

b. An overall air lock leakage rate of $\leq 0.002\ L_a$ at P_a, 38 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

*a. With one air lock door inoperable in one or more containment air locks, or with the containment air lock interlock mechanism inoperable in one or more containment air locks:

1. Verify an OPERABLE door in each affected air lock is closed within one hour, and

2. Lock an OPERABLE door closed in each affected air lock within 24 hours, and

3. Operation may then continue provided that an OPERABLE door in each affected air lock is maintained closed and is verified to be locked closed at least once per 31 days, and provided that the containment air lock passes each scheduled performance of SR 4.6.1.3b.

4. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*b. With one or more containment air locks inoperable except as a result of an inoperable air lock door or air lock interlock mechanism:

1. Verify at least one door in each affected air lock is closed within one hour, and

2. Restore air lock(s) to OPERABLE status within 24 hours.

3. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*Entry and exit through the OPERABLE door is permissible if necessary to perform repairs of the affected air lock components. After each entry and exit, the OPERABLE door must be closed without delay.

CONTAINMENT SYSTEMS

CONTAINMENT AIR LOCKS

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SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. By verifying either no detectable seal leakage when the volume between the door seals is pressurized to 10 psig, or by verifying a seal leakage rate of $\leq$ 0.0015 L_a when the volume between the door seals is pressurized to P_a, 38 psig, and the air lock door holddowns are installed:

1. #Within 72 hours after each opening, (in MODES 1, 2, 3 and 4) except when the air lock is being used for multiple entries, then at least once per 72 hours, and

2. *Prior to establishing CONTAINMENT INTEGRITY when maintenance has not been performed on the air lock that could affect the air lock sealing capability. Reperformance of this test is not required prior to entering MODE 4 if the air lock has not been opened since the previous test.

b. By conducting an overall air lock leakage test at P_a, 38 psig, and by verifying that the overall air lock leakage rate is within its limit:

1. #At least once per 6 months, and

2. *Prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the air lock that could affect the air lock sealing capability.

c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

*Exemption to Appendix "J" of 10 CFR 50.
#The provisions of Specification 4.0.2 are not applicable.

REFUELING OPERATIONS

CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

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

b. A minimum of one door in each air lock closed, ~~and~~ but both doors of the containment personnel air lock may be open provided that at least one personnel air lock door is capable of being closed and a designated individual is available immediately outside the personnel air lock to close the door, and

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

1. Closed by a manual or automatic ~~an~~ isolation valve, blind flange, or equivalent ~~manual valve~~, or

2. Be capable of being closed by an OPERABLE containment purge and exhaust isolation valve.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

a. With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment. ~~The provisions of Specification 3.0.3 are not applicable.~~

b. 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.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations shall be determined to be either in its required ~~closed/isolated~~ condition or capable of being closed by an OPERABLE containment purge and exhaust valve, within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment, by:

a. Verifying the penetrations are in their required ~~isolated~~ condition, or

b. Verifying that with the containment purge and exhaust system in operation, and the containment purge and exhaust system noble gas monitor capable of providing a high radiation signal to the control room, that after initiation of the high radiation signal, the containment purge and exhaust isolation valves can be closed from the control room, or

If using the SFAS area radiation monitors, verifying that on a Containment Purge and Exhaust Isolation test signal, each purge and exhaust isolation valve automatically actuates to its isolation position.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING 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 volumes having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analysis.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure 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 safety analyses.

3/4.9.4 CONTAINMENT PENETRATIONS

During CORE ALTERATIONS or movement of irradiated fuel within the containment, release of fission product radioactivity to the environment as a result of a fuel element rupture must be minimized. During MODES 1, 2, 3, and 4, this is accomplished by maintaining CONTAINMENT INTEGRITY as described in LCO 3.6.1.1. In other situations, the potential for containment pressurization as a result of an accident is not present, and therefore less stringent requirements are needed to isolate the containment from the atmosphere outside containment. Both containment personnel air lock doors may be open during CORE ALTERATIONS or during movement of irradiated fuel within the containment provided the conditions specified in LCO 3.9.4.b are met. The individual designated to be continuously available to close the air lock door must be stationed at the auxiliary building side of the air lock. A containment personnel air lock door is considered capable of being closed if the door is unblocked and there are no cables or hoses being run through the air lock. The LCO 3.9.10 requirement to maintain a minimum of 23 feet of water over the top of irradiated fuel assemblies seated within the reactor pressure vessel during movement of fuel assemblies within the reactor pressure vessel while in MODE 6 ensures that sufficient water depth is available to remove 99% of the assumed iodine gap activity released from the rupture of an irradiated fuel assembly. Further, sufficient time is available to close the personnel air lock following a loss of shutdown cooling before boiling occurs.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.4 CONTAINMENT PENETRATIONS (Continued)

Regarding LCO 3.9.4.c, the phrase "atmosphere outside containment" refers to anywhere outside the containment vessel, including (but not limited to) the containment annulus and the auxiliary building.

For penetrations that are closed by a method equivalent to a manual or automatic isolation valve, or a blind flange, the isolation technique must be approved by an engineering evaluation. The isolation technique may include the use of a material that can provide a temporary seal capable of maintaining the integrity of the penetration to restrict the release of radioactive material from a fuel handling accident.

~~The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure requirements are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.~~

With the containment purge and exhaust system in operation, a high radiation signal received from the containment purge and exhaust system noble gas monitor will effectively automatically contain the release by shutting down the containment purge system supply and exhaust fans and closing their inlet and outlet dampers. On a valid signal, the control room operator will then manually close the containment purge and exhaust isolation valves. Therefore, the uncontrolled release of radioactive material from the containment to the environment will be restricted.

Likewise, use of the SFAS area radiation monitors provide an automatic containment isolation signal on high radiation, restricting the uncontrolled release of radioactive material from the containment to the environment.

3/4.9.5 COMMUNICATIONS

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

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REFUELING OPERATIONS

WATER LEVEL - REACTOR VESSEL

LIMITING CONDITION FOR OPERATION

3.9.10 As a minimum, 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated within the reactor pressure vessel.

APPLICABILITY: During movement of fuel assemblies or control rods within the reactor pressure vessel while in MODE 6.

ACTION:

With the requirements of the above specification not satisfied, suspend all operation involving movement of fuel assemblies or control rods within the reactor pressure vessel. 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 within 2 hours prior to the start of and at least once per 24 hours during movement of fuel assemblies or control rods within the reactor pressure vessel.