CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

a. The equipment hatch cover closed and held in place by a minimum of four bolts, except the equipment hatch may be open provided the requirements of Specification 3.9.12 are satisfied,

b. A minimum of one door in each air lock closed, 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 atmosphere outside containment shall be either:

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

   2. Be capable of being closed from the control room by an OPERABLE containment purge and exhaust valve upon receipt of a high radiation signal from the containment purge and exhaust system noble gas monitor.

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.

b. With the requirements of Specification 3.9.4.c not satisfied for the containment purge and exhaust system, close at least one of the isolation valves for each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere within one hour.

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 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 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.

STORAGE POOL VENTILATION

LIMITING CONDITION FOR OPERATION

3.9.12 Two independent emergency ventilation systems servicing the storage pool area shall be OPERABLE. When an emergency ventilation system servicing the storage pool is incapable of meeting the acceptance criteria of Surveillance Requirement 4.9.12.1 solely because the containment equipment hatch is open and both doors of the containment personnel air lock are open, it may be considered OPERABLE 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.

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool, cask pit, or transfer pit, or during CORE ALTERATIONS or movement of irradiated fuel within the containment with the containment equipment hatch open.

ACTION:

a. With one emergency ventilation system servicing the storage pool area inoperable, fuel movement within the spent fuel pool, cask pit, or transfer pit, or crane operation with loads over the spent fuel pool, cask pit, or transfer pit, may proceed provided the OPERABLE emergency ventilation system servicing the storage pool area is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.

b. With one emergency ventilation system servicing the storage pool area inoperable, CORE ALTERATIONS and fuel movement within containment may proceed provided either the OPERABLE emergency ventilation system servicing the storage pool area is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers or the containment equipment hatch cover is closed and held in place by a minimum of four bolts.

c. With no emergency ventilation system servicing the storage pool area OPERABLE, suspend CORE ALTERATIONS and all operations involving movement of fuel within the containment, spent fuel pool, cask pit, or transfer pit, or crane operation with loads over the spent fuel pool, cask pit, or transfer pit, until at least one system is restored to OPERABLE status. CORE ALTERATIONS and fuel movement within containment may proceed provided the containment equipment hatch cover is closed and held in place by a minimum of four bolts.

d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12.1 The above required emergency ventilation system servicing the storage pool area shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.6.5.1, and at least once each REFUELING INTERVAL by verifying that the emergency ventilation system servicing the storage pool area maintains the storage pool area at a negative pressure of $\geq$ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

4.9.12.2 The normal storage pool ventilation system shall be demonstrated OPERABLE at least once each REFUELING INTERVAL by verifying that the system fans stop automatically and that dampers automatically divert flow into the emergency ventilation system on a fuel storage area high radiation test signal.

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.

The containment equipment hatch cover may be off during CORE ALTERATIONS or movement of irradiated fuel in containment provided the requirements of Specification 3.9.12 are satisfied. The requirements of Specification 3.9.12 ensure that the emergency ventilation system servicing the storage area is OPERABLE with the ability to filter any radioactive release through the containment equipment hatch following a fuel handling accident. Since containment closure is not credited for mitigating the consequences of the fuel handling accident as described in the Updated Safety Analysis Report, the equipment hatch cover need not be installed to ensure adequate protection of the public health or safety.

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.

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.

With the containment purge and exhaust system not in operation, there would be no flow to the containment purge and exhaust system noble gas monitor, hence the requirements of Specification 3.9.4.c.2 would not be satisfied. In this situation, unless Specification 3.9.4.c.1 is satisfied, entry into the Action statement would be required.

With a containment purge penetration not capable of being closed from the control room by an OPERABLE containment purge and exhaust isolation valve upon receipt of a high radiation signal from the containment purge and exhaust system noble gas monitor, closure of the containment purge and exhaust penetrations with at least one isolation valve ensures that the uncontrolled release of radioactive material from the containment to the environment will be restricted.

3/4.9.5 COMMUNICATIONS

Deleted

3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

Deleted

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% of the iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

3/4.9.12 STORAGE POOL VENTILATION

The requirements on the emergency ventilation system servicing the storage pool area to be operating or OPERABLE ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.

Specification 3.9.12 permits an emergency ventilation system servicing the storage pool that is incapable of meeting the acceptance criteria of Surveillance Requirement 4.9.12.1 solely because the containment equipment hatch is open and both doors of the containment personnel air lock are open to be considered OPERABLE provided 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. When the containment equipment hatch is open and both doors of the containment personnel air lock are open, the emergency ventilation system servicing the fuel storage area is incapable of maintaining a negative pressure of $\geq$ 1/8 inches Water Gauge relative to the outside atmosphere during system operation. The requirement that at least one personnel air lock door be capable of being closed and a designated individual be available immediately outside the personnel air lock to close the door ensures that the negative pressure boundary can be established in a timely manner following a fuel handling accident in the storage pool area or containment. Once the negative pressure boundary is established, the emergency ventilation system servicing the storage pool area will be capable of establishing the required negative pressure relative to the outside atmosphere.

3/4.9.13 SPENT FUEL ASSEMBLY STORAGE

The restrictions on the placement of fuel assemblies within the spent fuel pool, cask pit, and transfer pit, as dictated by Figure 3.9-1, Figure 3.9-2, and Figure 3.9-3, ensure that the k-effective of the spent fuel pool, cask pit, and transfer pit will always remain less than 0.95 assuming the spent fuel pool, cask pit, and transfer pit to be flooded with non-borated water. The restrictions delineated in Figure 3.9-1, Figure 3.9-2, and Figure 3.9-3, and the action statement, are consistent with the criticality safety analyses performed for the spent fuel pool, cask pit, and transfer pit. The term "directly adjacent" as used in Figure 3.9-1 refers to fuel assemblies stored face-to-face.

The criticality analyses qualify the high density rack modules for storage of fuel assemblies in one of three different loading patterns, subject to certain restrictions: Mixed Zone Three Region, Checkerboard, and Homogeneous Loading. Figure 3.9-3 provides the Category-specific burnup/enrichment limitations. Different loading patterns may be used in different rack modules, provided each rack module contains only one loading pattern. Two different loading patterns maybe used in a single rack module, subject to certain additional restrictions. The loading pattern restrictions are maintained in fuel handling administrative procedures.

The design features of the low density spent fuel storage racks are described in Specification 5.6.1.1. The design features of the high density spent fuel storage racks are described in Specification 5.6.1.3.