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CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves specified in Tables 3.6-2a and 3.6-2b shall be OPERABLE with isolation times as shown in Tables 3.6-2a and 3.6-2b.

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

ACTION:

With one or more of the isolation valve(s) specified in Tables 3.6-2a and 3.6-2b inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and:

- a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or
- b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or
- c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or
- d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 The isolation valves specified in Tables 3.6-2a and 3.6-2b shall be demonstrated OPERABLE 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 a cycling test and verification of isolation time.

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CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each isolation valve specified in Tables 3.6-2a and 3.6-2b 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" Isolation test signal, each Phase "A" isolation valve actuates to its isolation position;**
- b. Verifying that on a Phase "B" Isolation test signal, each Phase "B" isolation valve actuates to its isolation position;**
- c. Verifying that on a Containment Radioactivity-High test signal, each purge and exhaust valve actuates to its isolation position; ~~and~~
- d. ~~Verifying that on a High Relative Humidity (>70%) isolation test signal, each upper and lower containment purge supply and exhaust valve actuates to its isolation position.~~

4.6.3.3 The isolation time of each power-operated or automatic valve of Tables 3.6-2a and 3.6-2b shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

**This surveillance need not be performed until prior to entering HOT SHUTDOWN following the Unit 1 first refueling.

REFUELING OPERATIONS

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 airlock 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, or manual valve, or
 - 2) Exhausting through an OPERABLE Reactor Building Containment Purge System HEPA filters and activated carbon adsorbers.

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

ACTION:

- a. With the requirements of the above specification not satisfied for reasons other than the heaters tested per 4.9.4.2.a and 4.9.4.2.d.2, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.
- b. With a heater tested per 4.9.4.2.a and 4.9.4.2.d.2 inoperable, restore the inoperable heater to operable status within 7 days, or file a Special Report in accordance with Specification 6.9.2 within 30 days, specifying the reason for inoperability and the planned actions to return the heater to operable status.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or exhausting through an OPERABLE Reactor Building Containment Purge System ~~with the capability of being automatically isolated upon heater failure~~ within 72 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment building by:

- a. Verifying the penetrations are in their closed/isolated condition, or
- b. ~~Verifying the upper and lower containment purge supply and exhaust valves close upon a High Relative Humidity test signal.~~
Exhausting through AN OPERABLE REACTOR BUILDING CONTAINMENT PURGE SYSTEM.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

4.9.4.2 The Reactor Building Containment Purge System shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating flow through the HEPA filters and activated carbon adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating;
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or activated carbon adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedures 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 rate is 25,000 cfm \pm 10% (both exhaust fans operating);
 - 2) Verifying within 31 days after removal, that a laboratory analysis** of a representative activated carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and tested per ASTM-D3803-89, has a methyl iodide penetration of less than 6%; and
 - 3) Verifying a system flow rate of 25,000 cfm \pm 10% (both exhaust fans operating) during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of activated carbon adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis** of a representative activated carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and tested per ASTM D3803-89 has a methyl iodide penetration of less than 6%;
- d. At least once per 18 months by:
 - 1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and prefilters is less than 8 inches Water Gauge while operating the system at a flow rate of 25,000 cfm \pm 10% (both exhaust fans operating); and

*The requirement for reducing refrigerant concentration to 0.01 ppm may be satisfied by operating the system for 10 hours with heaters on and operating.

**Activated carbon adsorber samples are tested at 30 degrees C and 95% RH.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- 2) Verifying that the filter train duct heater dissipates 120 ± 12 kW at a nominal voltage of 600 vac.
- e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 25,000 cfm \pm 10% (both exhaust fans operating); and
- f. After each complete or partial replacement of an activated carbon adsorber bank, by verifying that the cleanup system bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 25,000 cfm \pm 10% (both exhaust fans operating).