CONTAINMENT SYSTEMS

HYDROGEN PURGE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.4.4 A containment hydrogen purge system shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With the containment hydrogen purge system inoperable, restore the hydrogen purge system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.4 The hydrogen purge system shall be demonstrated OPERABLE:

a. At least once per 18 months by initiating flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.

b. At least once per 18 months or (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 system by:

1. Verifying that the ~~purge~~ clean up system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in and uses the test procedures guidance of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, and the system flow rate is 100 cfm ±10%, and

2. Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, for a methyl iodide penetration of less than 1%.

~~*The pre- and post-loading sweep medium temperature shall be 80°C for Test 6.b of Table 2, Regulatory Guide 1.52, Revision 1, July 1976.~~

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. After every 720 hours of charcoal adsorber operation by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, ~~1, July 1976~~, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, for a methyl iodide penetration of less than 1%.

d. 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 25 inches Water Gauge while operating the system at a flow rate of 100 cfm ± 10%; and

2. Verifying that the heaters dissipate 2.0 + 0.4 kw when tested in accordance with ANSI N510-~~1975~~ 1980.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the ~~HEPA filter banks remove > 99% of the DOP when they are tested in place~~ in accordance with ANSI N510-~~1975~~ 1980 for a DOP test aerosol while operating the system at a flow rate of 100 cfm ± 10%.

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the ~~charcoal adsorbers remove > 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in place~~ in accordance with ANSI N510-~~1975~~ 1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 100 cfm ± 10%.

cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1%

cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1%

CONTAINMENT SYSTEMS

3/4.6.5 SHIELD BUILDING

EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.5.1 Two independent emergency ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one emergency ventilation system inoperable, restore the inoperable 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.

SURVEILLANCE REQUIREMENTS

4.6.5.1 Each emergency ventilation system shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

b. At least once per 18 months or (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 system by:

~~1. Verifying that with the system operating at a flow rate of 8,000 cfm ± 10% and exhausting through the HEPA filters and charcoal adsorbers, the total bypass flow of the system to the facility vent, is < 1% when the system is tested by admitting DOP at the system intake.~~

Docket No. 50-346
License No. NPF-3
Serial No. 1494
Attachment 3

ADDITIONAL CHANGES PREVIOUSLY PROPOSED BY LETTER
Serial No. 1407 Date 11/2/88

SURVEILLANCE REQUIREMENTS (Continued)

1 ~~f~~. 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 of guidance in Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, and the system flow rate is 8,000 cfm ±10%;

2 ~~f~~. Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, for a methyl iodide penetration of less than 1%; and

3 ~~f~~. Verifying a system flow rate of 8,000 cfm ±10% during system operation when tested in accordance with ANSI N510-~~1975~~ 1980.

c. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, ~~1, July 1976~~ meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, for a methyl iodide penetration of less than 1%.

d. 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 6 inches Water Gauge while operating the system at a flow rate of 8,000 cfm ± 10%;

2. Verifying that the system starts automatically on any containment isolation test signal;**

3. Verifying that the filter cooling bypass valves can be manually opened; and

~~*Representative samples of used activated carbon from the EVS shall pass the laboratory test given in Table 3 for an activated carbon bed depth of 2 inches (i.e., the two 2 inch filter beds in series shall be tested per Test 5.b in Table 2 at a relative humidity of 70% for a methyl iodide penetration of less than 1%). The pre- and post-loading sweep medium temperature shall be 80°C for Test 5.b of Table 2, Regulatory Guide 1.52, Revision 1, July 1976.~~

~~**Eighteen-month surveillance test due in March 1982 delayed until March 31, 1982.~~

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

greater than or equal to

4. Verifying that each system produces a negative pressure of ≥ 0.25 inches W.G. in the annulus within 4 seconds after the fan maintains a flow rate of 8000 cfm ± 10%. This test is to be performed with the flow path established prior to starting the EVS fan, and the other dampers associated with the negative pressure boundary closed.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the ~~HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place~~ in accordance with ANSI N510-1975, while operating the system at a flow rate of 8000 cfm ± 10%.

1980 for a DOP test aerosol

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the ~~charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place~~ in accordance with ANSI N510-~~1975~~ while operating the system at a flow rate of 8000 cfm ± 10%.

1980 for a halogenated hydrocarbon refrigerant test gas

Cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1%

Cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1%

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent control room emergency ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one control room emergency ventilation system inoperable, restore the inoperable 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.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each control room emergency ventilation system shall be demonstrated OPERABLE:

a. At least once per 12 hour (less than or equal to) by verifying that the control room air temperature is ≤ 110°F when the control room emergency ventilation system is operating.

b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

c. At least once per 18 months or (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 system by:

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~1. Verifying that with the system operating at a flow rate of 3300 cfm ± 10% and exhausting through the HEPA filters and charcoal adsorbers, the total bypass flow of the system is < 1% when the system is tested by admitting DOP at the system intake.~~

1 2. Verifying that the system satisfies the in-place testing (clean up) (penetration and bypass leakage) acceptance criteria (of less than 1%) and uses the test procedure guidance in ~~of~~ Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, and the system flow rate is 3300 cfm ±10%;

2 3. Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision (2, March 1978,) ~~1, July 1976~~ meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision ~~1, July 1976,~~ 2, March 1978, for a methyl iodide penetration of less than 1%; and

3 4. Verifying a system flow rate of 3300 cfm ±10% during system operation when tested in accordance with ANSI N510-~~1975~~ 1980.

d. After every 720 hours of charcoal adsorber operation by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978 ~~1, July 1976~~ meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision ~~1, July 1976~~ 2, March 1978, for a methyl iodide penetration of less than 1%.

e. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is ~~2~~ 4.4 inches water Gauge while operating the system at a flow rate of 3300 cfm ± 10%, (less than)

2. Verifying that the control room normal ventilation system is isolated by a SFAS test signal, Control Room Ventilation Air Intake Chlorine Concentration - High test signal, and a Station Vent Radiation High test signal; and

~~The pre- and post-loading sweep medium temperature shall be 80°C for Test 5.b of Table 2, Regulatory Guide 1.52, Revision 1, July 1976.~~

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

ing

3. Verify that the make up flow of the system is 300 cfm ± 10% when supplying the control room with outside air.

f. After each complete or partial replacement of a HEPA filter bank, by verifying that the ~~HEPA filter banks remove > 99% of the DOP when they are tested in place~~ in accordance with ANSI N510-~~1975~~ while operating the system at a flow rate of 3300 cfm ± 10%.

1980 ~~for~~ a DOP test aerosol

g. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the ~~charcoal adsorbers remove > 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place~~ in accordance with ANSI N510-~~1975~~ while operating the system at a flow rate of 3300 cfm ± 10%.

1980 for a halogenated hydrocarbon refrigerant testgas

cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1%.

cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1%.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the Hydrogen Analyzers, Containment Hydrogen Dilution System, and Hydrogen Purge System ensures that this equipment will be available to maintain the maximum hydrogen concentration within the containment vessel at or below three volume percent following a LOCA.

The two redundant Hydrogen Analyzers determine the content of hydrogen within the containment vessel.

The Containment Hydrogen Dilution (CHD) System consists of two full capacity, redundant, rotary, positive displacement type blowers to supply air to the containment. The CHD System controls the hydrogen concentration by the addition of air to the containment vessel, resulting in a pressurization of the containment and suppression of the hydrogen volume fraction.

The Containment Hydrogen Purge System Filter Unit functions as a backup to the CHD System and is designed to release air from the containment atmosphere through a HEPA filter and charcoal filter prior to discharge to the station vent.

3/4.6.5 SHIELD BUILDING

3/4.6.5.1 EMERGENCY VENTILATION SYSTEM

The OPERABILITY of the emergency ventilation systems ensures that containment vessel leakage occurring during LOCA conditions into the annulus will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere. This requirement is necessary to meet the assumptions used in the safety analyses and limit the site boundary radiation doses to within the limits of 10 CFR 100 during LOCA conditions.

the flow path can be established. The ability for local, manual operation is demonstrated by verifying the presence of the handwheels for all manual valves and the presence of either handwheels or available power supply for motor operated valves.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 110°F and 237 psig are based on a steam generator RT_{NDT} of 40°F and are sufficient to prevent brittle fracture.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consiscent with the assumptions used in the safety analyses.

3/4.7.4 SERVICE WATER SYSTEM

The OPERABILITY of the service water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either 1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 30 day cooling water supply to safety related equipment without exceeding their design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants" March 1974.

3/4.7.6 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

The OPERABILITY of the control room emergency ventilation system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable 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. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix "A", 10 CFR 50.