With the heaters tested in 4.7.6.b and 4.7.6.e.4 inoperable, restore the inoperable heaters 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 heaters to operable status.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6 Two independent Control Room Area Ventilation Systems shall be OPERABLE.

APPLICABILITY: ALL MODES

ACTION: (Units 1 and 2)

MODES 1, 2, 3 and 4:

a. With one Control Room Area Ventilation System inoperable for reasons other than the heaters tested in 4.7.6.b and 4.7.6.e.4, 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.

b.

MODES 5 and 6:

a. With one Control Room Area Ventilation System inoperable for reasons other than the heaters tested in 4.7.6.b and 4.7.6.e.4, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Area Ventilation System.

b. With both Control Room Area Ventilation Systems inoperable for reasons other than the heaters tested in 4.7.6.b and 4.7.6.e.4, or with the OPERABLE Control Room Area Ventilation System, required to be operating by ACTION a., not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

c. The provisions of Specification 3.0.4 are not applicable.

d.

SURVEILLANCE REQUIREMENTS

4.7.6 Each Control Room Area Ventilation System 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 90°F;

b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, 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;

SURVEILLANCE REQUIREMENTS (Continued)

c. 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 0.05% and uses the test procedure guidance in Regulatory Position C.5.a, C.5.c, and C.5.d* of Regulatory Guide 1.52, Revisions 2, March 1978, and the system flow rate is 6000 cfm ± 10%;

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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for~~ a methyl iodide penetration of less than ~~0.175%~~ 0.95% and has

and tested per ASTM D3803-89

3) Verifying a system flow rate of 6000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

d. After every 1440 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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for~~ a methyl iodide penetration of less than ~~0.175%~~ 0.95%; has

and tested per ASTM D3803-89

e. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and moisture separators is less than 8 inches Water Gauge while operating the system at a flow rate of 6000 cfm ± 10%;

2) Verifying that on a High Radiation-Air Intake, or Smoke Density-High test signal, an alarm is received in the control room;

3) Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch Water Gauge relative to adjacent areas at less than or equal to pressurization flow of 4000 cfm to the control room during system operation;

4) Verifying that the heaters dissipate 25 ± 2.5 kW, and at a nominal voltage of 600 VAC

*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 degree C and 95% RH.

No Changes to this page

SURVEILLANCE REQUIREMENTS (Continued)

5) Verifying that on a High Chlorine/Toxic Gas test signal, the system automatically isolates the affected intake from outside air with recirculating flow through the HEPA filters and activated carbon adsorbers banks within 10 seconds (plus air travel time between the detectors and the isolation dampers).

f. 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 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 6000 cfm ± 10%; and

g. After each complete or partial replacement of an activated carbon adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 6000 cfm ± 10%.

3/4.7.5 STANDBY NUCLEAR SERVICE WATER POND

The limitations on the standby nuclear service water pond (SNSWP) level and temperature ensure that sufficient cooling capacity is available to either: (1) provide normal cooldown of the facility, or (2) 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 its design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," March 1974.

The peak containment pressure analysis assumes that the Nuclear Service Water (RN) flow to the Containment Spray and Component Cooling heat exchangers has a temperature of 86.5°F. This temperature is important in that it, in part, determines the capacity for energy removal from containment. The peak containment pressure occurs when energy addition to containment (core decay heat) is balanced by energy removal from these heat exchangers. This balance is reached far out in time, after the transition from injection to cold leg recirculation and after ice melt. Because of the effectiveness of the ice bed in condensing the steam which passes through it, containment pressure is insensitive to small variations in containment spray temperature prior to ice meltout.

To ensure that the RN temperature assumptions are met, Lake Wylie temperature is monitored. During periods of time while Lake Wylie temperature is greater than 86.5°F, the emergency procedure for transfer of ECCS flow paths to cold leg recirculation directs the operator to align at least one train of containment spray to be cooled by a loop of Nuclear Service Water which is aligned to the SNSWP.

3/4.7.6 CONTROL ROOM AREA VENTILATION SYSTEM

The OPERABILITY of the Control Room Area 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. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The Control Room Area Ventilation System filter units have no bypass line. Either Control Room Area Ventilation System train must operate in the filtered mode continuously. When a train is in operation, its associated heater also runs continuously. 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 rems or less whole body, or its equivalent. ~~This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.~~ ANSI N510-1980 will be used as a procedural guide for surveillance testing.

Add Insert 1

(GDC 19 limit)

Insert #1

The specified laboratory test method, namely, ASTM D3803-89, implies that heaters may be unavailable for controlling the relative humidity of the influent air entering the charcoal adsorber section to less than or equal to 70 percent. This is acceptable, since accident analysis uses appropriate adsorber efficiencies for radioiodine in elemental and organic forms based on the above test shows the control room radiation dose remains within the 10 CFR Part 50, Appendix A, GDC 19 limits during design basis LOCA conditions. However, specifications are included to ensure heater operability and corrective ACTIONS are identified to address the contingency of inoperable heaters; these are in place to increase the safety margin of the filters.

No Changes to this page.

BASES

The 18-month surveillance to verify a positive pressure of greater than 1/8 inch water gauge, with less than or equal to 4000 cfm of pressurization flow, is to be conducted using only one intake from outside air open. By testing the capability to pressurize the control room using each intake individually, the design basis which assumes reopening of the two intakes following isolation on chlorine, smoke or radiation, is tested.

3/4.7.7 AUXILIARY BUILDING FILTERED EXHAUST SYSTEM

The OPERABILITY of the Auxiliary Building Filtered Exhaust System ensures that radioactive materials leaking from the ECCS equipment within the auxiliary building following a LOCA are filtered prior to reaching the environment. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was not taken credit for in the safety analyses. However, the operation of this system and the resultant effect on the NRC staff's offsite dose calculations was assumed in the staff's SER, NUREG-0954. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

3/4.7.8 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Catawba Safety Review Group. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.) and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletions of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.

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.

b. With a heater tested per 4.9.4.2a and 4.9.4.2.d inoperable, restore the 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.

for reasons other than the heaters tested per 4.9.4.2.a and 4.9.4.2.d

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 ± 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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for~~ has a methyl iodide penetration of less than 6%; and

and tested per ASTM-D3803-89

3) Verifying a system flow rate of 25,000 cfm ± 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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for~~ has a methyl iodide penetration of less than 6%;

** and tested per ASTM-D3803-89

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 ± 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°C and 95% RH.

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 ± 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 ± 10% (both exhaust fans operating).

No Changes to this page

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 volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the safety analyses. The value of 0.95 or less for K_{eff} includes a 1% $\Delta k/k$ conservative allowance for uncertainties. Similarly, the boron concentration value of 2000 ppm or greater includes a conservative uncertainty allowance of 50 ppm boron.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the Boron Dilution Mitigation System ensures that 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 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 BUILDING PENETRATIONS

The requirements on containment building penetration closure and OPERABILITY of the Reactor Building Containment Purge System ensure that a release of radioactive material within containment will be restricted from leakage to the environment or filtered through the HEPA filters and activated carbon adsorbers prior to release to the atmosphere. The OPERABILITY and closure restrictions 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. Operation of the Reactor Building Containment Purge System and the resulting iodine removal capacity are consistent with the assumption of the safety analysis. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

CONTAINMENT SYSTEMS

ANNULUS VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.8 Two independent Annulus Ventilation Systems shall be OPERABLE.

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

ACTION:

With one Annulus 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

4.6.1.8 Each Annulus 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 activated carbon adsorbers and verifying that the system operates for at least 10 continuous hours with the pre-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% (Unit 1), 0.05% (Unit 2) 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 rate is 9000 cfm ± 10%;

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 ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978~~, for a methyl iodide penetration of less than ~~1%~~ and

3) Verifying a system flow rate of 9000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

*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.

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 ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978~~, for a methyl iodide penetration of less than ~~1%~~ 4%; and tested per ASTM-D3803-89 has

d. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and moisture separators is less than 8 inches Water Gauge while operating the system at a flow rate of 9000 cfm ± 10%;

2) Verifying that the system starts automatically on any ~~Phase "A" Isolation~~ Safety Inject. test signal,**

3) Verifying that the filter cooling electric motor-operated bypass valves can be manually opened,

4) Verifying that each system produces a negative pressure of greater than or equal to 0.5 inch Water Gauge in the annulus within 1 minute after a start signal, and

5) Verifying that the pre-heaters dissipate 45 ± 6.7 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% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 9000 cfm ± 10%; and

f. After each complete or partial replacement of an activated carbon adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 9000 cfm ± 10%.

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

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

3/4 6.1.8 ANNULUS VENTILATION SYSTEM

The OPERABILITY of the Annulus Ventilation System ensures that during LOCA conditions, containment vessel leakage into the annulus will be filtered through the HEPA filters and activated carbon adsorber trains prior to discharge to the atmosphere. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. ~~This requirement is necessary to meet the assumptions used in the safety analyses and limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during LOCA conditions.~~ A ANSI N510-1980 will be used as a procedural guide for surveillance testing.

Add Insert #2

3/4 6.1.9 CONTAINMENT PURGE SYSTEMS

The containment purge supply and exhaust isolation valves for the lower compartment and the upper compartment (24-inch), and instrument room (12-inch), and the Hydrogen Purge System (4-inch) are required to be sealed closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA. Maintaining these valves sealed closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the Containment Purge System. To provide assurance that these containment valves cannot be inadvertently opened, the valves are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevents power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 4-inch Containment Air Release and Addition System valves since, unlike the lower compartment and the upper compartment, instrument room, and the Hydrogen Purge System valves, these 4-inch valves are capable of closing during a LOCA. Therefore, the SITE BOUNDARY dose guideline values of 10 CFR Part 100 would not be exceeded in the event of an accident during containment purging operation. Operation with the line open will be limited to 3000 hours during a calendar year for the 4-inch valves. The total time the containment purge (vent) system isolation valves may be open during MODES 1, 2, 3, and 4 in a calendar year is a function of anticipated need and operating experience. Only safety-related reasons (e.g., containment pressure control or the reduction of airborne radioactivity to facilitate personnel access for surveillance and maintenance activities, may be used to justify the opening of these isolation valves.

Leakage integrity tests with a maximum allowable leakage rate for containment purge supply and exhaust valves will provide early indication of resilient material seal degradation and will allow opportunity for repair before gross leakage failures could develop. The 0.60 L_a leakage limit of Specification 3.6.1.2b. shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

Insert #2

The specified laboratory test method, namely, ASTM D3803-89, implies that heaters may be unavailable for controlling the relative humidity of the influent air entering the charcoal adsorber section to less than or equal to 70 percent. This is acceptable, since accident analysis with appropriate adsorber efficiencies for radioiodine in elemental and organic forms based on the above test shows the site boundary radiation doses to be within the 10 CFR Part 100 limits during design basis LOCA conditions. However, specifications are included to ensure heater operability and corrective ACTIONS are identified to address the contingency of inoperable heaters; these are in place to increase the safety margin of the filters.

b. With the heaters tested per 4.9.11.2.d and 4.9.11.2.d.4 inoperable, restore the inoperable heaters to operable status in 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 heaters to operable status.

REFUELING OPERATIONS

3/4.9.11 FUEL HANDLING VENTILATION EXHAUST SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.11 At least one train of the Fuel Handling Ventilation Exhaust System shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the storage pool.

ACTION: For reasons other than the heaters specified in 4.9.11.2.a and 4.9.11.2.d.4.

a. With both trains of the Fuel Handling Ventilation Exhaust System inoperable, suspend all operations involving movement of fuel within the storage pool or crane operation with loads over the storage pool until the Fuel Handling Ventilation Exhaust System is restored to OPERABLE status.

c b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11.1 One train of the Fuel Handling Ventilation Exhaust System shall be determined to be operating and discharging through the HEPA filter and activated carbon adsorbers at least once per 12 hours whenever irradiated fuel is being moved in the storage pool and during crane operation with loads over the storage pool.

4.9.11.2 Both trains of the Fuel Handling Ventilation Exhaust System shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating, from the control room, 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% (Unit 1), 0.05% (Unit 2) 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 rate is 16,565 cfm ± 10%;

*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.

SURVEILLANCE REQUIREMENTS (Continued)

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative activated carbon sample obtained in accordance with Regulatory Positions C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, as supplemented by ASTM D3803-86, Test Method "A"*, for~~ has a methyl iodide penetration of less than ~~0.71%~~ 4% and tested per ASTM D3803-89

3) Verifying a system flow rate of 16,565 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of activated carbon adsorber operation in any train 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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, as supplemented by ASTM D3803-86, Test Method "A"*, for~~ has a methyl iodide penetration of less than ~~0.71%~~ 4% and tested per ASTM D3803-89

d. At least once per 18 months for each train by:

1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and moisture separators is less than 8 inches Water Gauge while operating the system at a flow rate of 16,565 cfm ± 10%.

2) Varifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to ⅛ inch Water Gauge relative to the outside amosphere during system operation,

3) Verifying that the filter cooling bypass valves can be manually opened, and

4) Verifying that the heaters dissipate 80 + 8 kW/-17.3 kW** At a nominal voltage of 600VAC

~~*Use of ASTM D3803-86, Test Method "A" as a supplement applies until August 26, 1991. Thereafter, the surveillance requirement shall read, "...meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1%."~~

~~**80 + 8 kW/-17.3 kW applies until August 26, 1991. Thereafter, the surveillance requirement shall read "Verifying that the heaters dissipate 80 + 8 kW."~~

+ Activated carbon adsorber samples are tested at 30°C and 95% RH

No Changes to this page

SURVEILLANCE REQUIREMENTS (Continued)

e. After each complete or partial replacement of a HEPA filter bank in any train, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 16,565 cfm ± 10%; and

f. After each complete or partial replacement of an activated carbon adsorber bank in any train, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 16,565 cfm ± 10%.

3/4.9.9 and 3/4.9.10 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 assumed 10% 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.

3/4.9.11 FUEL HANDLING VENTILATION EXHAUST SYSTEM

The limitations on the Fuel Handling Ventilation Exhaust System ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and activated carbon adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. ~~The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.~~ ANSI N510-1980 will be used as a procedural guide for surveillance testing. ~~ASTM D3803-86, Test Method "A" will be used for surveillance testing (laboratory test) for methyl iodide penetration in lieu of the laboratory test specified in Regulatory Guide 1.52, Rev. 2, March 1978, Regulatory Position C.6.a. The ASTM D3803-86 test method uses a relative humidity of 95% at 30°C. The use of this test and the acceptance criterion of a methyl iodide penetration of less than 0.71% are consistent with assumed decontamination efficiencies of 9'?. This change resulted from the lower system heater capacity during degraded voltage conditions. The use of ASTM D3803-86 will apply until August 26, 1991. This date corresponds to the next due date for the 18-month surveillance on Unit 2. The Unit 2 date is used for both units because the next 18-month inspection date for Unit 1, December 13, 1990, will not allow for sufficient time to evaluate ASTM D3803-89.~~

Add insert 3

Insert #3

The specified laboratory test method, namely, ASTM D3803-89, implies that heaters may be unavailable for controlling the relative humidity of the influent air entering the charcoal adsorber section to less than or equal to 70 percent. This is acceptable, since accident analysis with appropriate adsorber efficiencies for radioiodine in organic and inorganic forms based on the above test shows the site boundary radiation doses to be well within (i.e., < 25 percent) the 10 CFR Part 100 limits during design basis fuel handling accident outside the containment. However, specifications are included to ensure heater operability and corrective ACTIONS are identified to address the contingency of inoperable heaters; these are in place to increase the safety margin of the filters.

PLANT SYSTEMS

3/4.7.7 AUXILIARY BUILDING FILTERED EXHAUST SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Two independent trains of the Auxiliary Building Filtered Exhaust System shall be OPERABLE.

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

ACTION:

a. With one train of the Auxiliary Building Filtered Exhaust System inoperable, restore the inoperable train 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

4.7.7 Each train of the Auxiliary Building Filtered Exhaust System shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating, from the control room, 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 same by:

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) 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 rate is 30,000 cfm ± 10%;

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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for~~ a methyl iodide penetration of less than ~~1%~~ 4%; 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.

~~Amendment No. 37 (Unit 1)~~
~~Amendment No. 29 (Unit 2)~~

SURVEILLANCE REQUIREMENTS (Continued)

3) Verifying a system flow rate of 30,000 cfm ± 10% 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, ~~meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978,~~ for a methyl iodide penetration of less than ~~1%~~ 2.4%;

d. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and moisture separators of less than 8 inches Water Gauge while operating the system at a flow rate of 30,000 cfm ± 10%,

2) Verifying that the system starts on a Safety Injection test signal, and directs its exhaust flow through the HEPA filters and activated carbon adsorbers,**

3) Verifying that the system maintains the ECCS pump room at a negative pressure relative to adjacent areas,

4) Verifying that the filter cooling bypass valves can be manually opened, and

5) Verifying that the heaters dissipate 40 ± 4 kW ~~kW~~ at a nominal voltage of 6600 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% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 30,000 cfm ± 10%; and

f. After each complete or partial replacement of an activated carbon adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 30,000 cfm ± 10%.

and tested per ASTM D3803-89

was

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

*** Activated carbon adsorber samples are tested at 30°C and 95% R.

BASES

The 18-month surveillance to verify a positive pressure of greater than 1/8 inch water gauge, with less than or equal to 4000 cfm of pressurization flow, is to be conducted using only one intake from outside air open. By testing the capability to pressurize the control room using each intake individually, the design basis which assumes reopening of the two intakes following isolation on chlorine, smoke or radiation, is tested.

3/4.7.7 AUXILIARY BUILDING FILTERED EXHAUST SYSTEM

The OPERABILITY of the Auxiliary Building Filtered Exhaust System ensures that radioactive materials leaking from the ECCS equipment within the auxiliary building following a LOCA are filtered prior to reaching the environment. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was not taken credit for in the safety analyses. However, the operation of this system and the resultant effect on the NRC staff's offsite dose calculations was assumed in the staff's SER, NUREG-0954. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

3/4.7.8 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Catawba Safety Review Group. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.) and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletions of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

Insert #4

The specified laboratory test method, namely, ASTM D3803-89, implies that heaters may be unavailable for controlling the relative humidity of the influent air entering the charcoal adsorber section to less than or equal to 70 percent. This is acceptable, since accident analysis with appropriate adsorber efficiencies for radioiodine in elemental and organic forms based on the above test shows the site boundary radiation doses to be within the 10 CFR Part 100 limits during design basis LOCA conditions. However, specifications are included to ensure heater operability and corrective ACTIONS are identified to address the contingency of inoperable heaters; these are in place to increase the safety margin of the filters.