

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:

With one Control Room Area 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.

MODES 5 and 6:

- a. With one Control Room Area Ventilation System inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Area Ventilation System, ~~with flow through the HEPA filters and activated carbon adsorbents~~.
- b. With both Control Room Area Ventilation Systems inoperable, 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.

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 adsorbents and verifying that the system operates for at least 10 continuous hours with the heaters operating;

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SURVEILLANCE REQUIREMENTS (Continued)

ASTM D3803-86, Test Method "A"
(Exception to Test Method A will be the use of 70% relative humidity instead of 95%, and a 4 inch carbon bed depth).

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 ~~1% (Unit 1)~~ 0.05% ~~(Unit 2)~~ 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 \pm 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 ~~XX~~ ^{0.175%}; and
- 3) Verifying a system flow rate of 6000 cfm \pm 10% during system operation when tested in accordance with ANSI N510-1980.

d. After every ~~200~~ 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 ~~XX~~ ^{0.175%};

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 \pm 10%;
- 2) Verifying that on a High Radition-Air Intake, or Smoke Density-High test signal, the system automatically isolates the affected intake from outside air with recirculating flow through the HEPA filters and activated carbon adsorber banks;
- 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

*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.

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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 ~~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 6000 cfm \pm 10%; and 1
- 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 ~~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 6000 cfm \pm 10%. §

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BASES

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 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.

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.