

Docket No. 50-423
B14551

Attachment 1

Millstone Unit No. 3
Proposed Revision to Technical Specifications
Supplementary Leak Collection and Release System
Markup Pages

July 1993

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CONTAINMENT SYSTEMS3/4.6.6 SECONDARY CONTAINMENTSUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEMLIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent Supplementary Leak Collection and Release Systems shall be OPERABLE with each system comprised of:

APPLICABILITY: MODES 1, 2, 3, and 4. a. One OPERABLE filter and fan, and

ACTION: b. One OPERABLE Auxiliary Building Filter System as defined in Specification 3.7.9

With one Supplementary Leak Collection and Release 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

4.6.6.1 Each Supplementary Leak Collection and Release 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 a system flow rate of 7600 cfm to 9800 cfm and 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 charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1) Verifying that the 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 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 7600 cfm to 9800 cfm;
 - 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 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%; and
 - 3) Verifying a system flow rate of 7600 cfm to 9800 cfm during system operation when tested in accordance with ANSI N510-1980.

CONTAINMENT SYSTEMSSURVEILLANCE 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,* 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%;
- 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 6.25 inches Water Gauge while operating the system at a flow rate of 7600 cfm to 9800 cfm,
 - 2) Verifying that the system starts on a Safety Injection test signal,
 - 3) Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch Water Gauge in the annulus within 50 seconds after a start signal, and
 - 4) Verifying that the heaters dissipate 50 ± 5 kW when tested in accordance with ANSI N510-1980.
- 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 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 7600 cfm to 9800 cfm; and
- f. After each complete or partial replacement of a charcoal 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 7600 cfm to 9800 cfm.
- an acceptable

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

SURVEILLANCE REQUIREMENTS (Continued)

- 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 1120 cfm \pm 20%; and
- g. After each complete or partial replacement of a charcoal 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 1120 cfm \pm 20%.

an acceptable

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

PLANT SYSTEMS

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9 Two independent Auxiliary Building Filter Systems shall be OPERABLE with each system comprised of;

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

ACTION:

With one Auxiliary Building Filter 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. In addition, comply with the Action requirements of Specification 3.6.6.1.

SURVEILLANCE REQUIREMENTS

4.7.9 Each Auxiliary Building Filter 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 a system flow rate of 30,000 cfm +10% and 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 charcoal 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 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 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%; and

PLANT SYSTEMSSURVEILLANCE REQUIREMENTS

- 3) Verifying a system flow rate of 30,000 cfm $\pm 10\%$ during system operation when tested in accordance with ANSI N510-1980.
- 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,* 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%;
- 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 6.8 inches Water Gauge while operating the system at a flow rate of 30,000 cfm $\pm 10\%$,
 - 2) Verifying that the system starts on a Safety Injection test signal, and
 - 3) Verifying that the heaters dissipate 180 ± 18 kW when tested in accordance with ANSI N510-1980.
- 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 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 30,000 cfm $\pm 10\%$; and
- f. After each complete or partial replacement of a charcoal 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 30,000 cfm $\pm 10\%$.

an acceptable

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

CONTAINMENT SYSTEMSBASES3/4.6.6 SECONDARY CONTAINMENT3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEMDelete and
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~~The OPERABILITY of the Supplementary Leak Collection and Release System ensures that containment leakage occurring during LOCA conditions into the enclosure building will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere. Cumulative operation of the system with the heaters operating 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. ANSI N510-1986 will be used as a procedural guide for surveillance testing.~~

3/4.6.6.2 ENCLOSURE BUILDING INTEGRITY

Secondary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the primary containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with operation of the Supplementary Leak Collection and Release System, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.6.3 ENCLOSURE BUILDING STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment enclosure building will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to provide an annulus surrounding the steel vessel that can be maintained at a negative pressure during accident conditions. A visual inspection is sufficient to demonstrate this capability.

INSERT A

Background

The OPERABILITY of the Supplementary Leak Collection and Release System (SLCRS) ensures that radioactive materials that leak from the primary containment into the secondary containment following a Design Basis Accident (DBA) are filtered out and adsorbed prior to any air release to the environment. The design of the SLCRS is to achieve a negative pressure of 0.25 inch water gauge within the secondary containment boundary within one minute of a DBA. The secondary containment boundary is comprised of the containment enclosure building (excluding the air volume above the SLCRS suction ductwork in the enclosure building) and all contiguous buildings (main steam valve building (partially), engineered safety features building (partially), hydrogen recombiner building (partially) and auxiliary building). To accomplish this, the SLCRS works in conjunction with the Auxiliary Building Filter (ABF) system (see Section 3/4.7.9). The pressure in the volume above the SLCRS suction ductwork in the enclosure building may be positive with respect to the outside. However, the effect of the exfiltration from the upper levels of the enclosure would be insignificant on the site doses. The SLCRS and the ABF fans and filtration units are located in the auxiliary building. The SLCRS is described in the Millstone Unit No. 3 FSAR, Section 6.2.3.

Applicable Safety Analyses

The SLCRS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis assumes that only one train of the SLCRS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction of the airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from the containment is determined for a LOCA.

The SLCRS is not normally in operation. The SLCRS starts on a SIS signal. The modeled SLCRS actuation in the safety analysis (the Millstone 3 FSAR Chapter 15, Section 15.6) is based upon a worst-case response time following an SI initiated at the limiting setpoint. One train of the SLCRS in conjunction with the ABF system is capable of drawing a negative pressure (-0.25 inch water gauge) within 60 seconds after a LOCA. This time includes diesel generator startup and sequencing time, system startup time, and time for the system to attain the required negative pressure after starting.

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)LCO

In the event of a DBA, one SLCRS is required to provide the minimum postulated iodine removal assumed in the safety analysis. Two trains of the SLCRS must be OPERABLE to ensure that at least one train will operate, assuming that the other train is disabled by a single-active failure. The SLCRS works in conjunction with the ABF system. Inoperability of one train of the ABF system also results in inoperability of the corresponding train of the SLCRS. Therefore, whenever LCO 3.7.9 is entered due to the ABF train A (B) being inoperable, LCO 3.6.6.1 must be entered due to the SLCRS train A (B) being inoperable.

Applicability

In MODES 1, 2, 3, and 4, a DBA could lead to a fission product release to containment that leaks to the secondary containment boundary. The large break LOCA, on which this system's design is based, is a full-power event. Less severe LOCAs and leakage still require the system to be OPERABLE throughout these MODES. The probability and severity of a LOCA decrease as core power and reactor coolant system pressure decrease. With the reactor shut down, the probability of release of radioactivity resulting from such an accident is low.

In MODES 5 and 6, the probability and consequences of a DBA are low due to the pressure and temperature limitations in these MODES. Under these conditions, the SLCRS is not required to be OPERABLE.

ACTIONS

With one SLCRS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The operable train is capable of providing 100 percent of the iodine removal needs for a DBA. The 7-day Completion Time is based on consideration of such factors as the reliability of the OPERABLE redundant SLCRS train and the low probability of a DBA occurring during this period. The Completion Time is adequate to make most repairs. If the SLCRS cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and MODE 5 within the following 30 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full-power conditions in an orderly manner and without challenging plant systems.

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

Surveillance Requirements

a

Cumulative operation of the SLCRS with heaters operating 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 31-day frequency was developed in consideration of the known reliability of fan motors and controls. This test is performed on a STAGGERED TEST BASIS once per 31-days.

b, c, e, and f

These surveillances verify that the required SLCRS filter testing is performed in accordance with Regulatory Guide 1.52, Revision 2. ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2. The surveillances include testing HEPA filter performance, charcoal adsorber efficiency, system flow rate, and the physical properties of the activated charcoal (general use and following specific operations).

d

The automatic startup ensures that each SLCRS train responds properly. The 18-month frequency is based on the need to perform this surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance were performed with the reactor at power. The surveillance verifies that the SLCRS starts on a SIS test signal. It also includes the automatic functions to isolate the other ventilation systems that are not part of the safety-related postaccident operating configuration and to start up and to align the ventilation systems that flow through the secondary containment to the accident condition.

- The main steam valve building ventilation system isolates.
- Auxiliary building ventilation (normal) system isolates.
- Charging pump/reactor plant component cooling water pump area cooling subsystem aligns and discharges to the auxiliary building filters.
- Hydrogen recombiner ventilation system aligns to the postaccident configuration.
- The engineered safety features building ventilation system aligns to the postaccident configuration.

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

With the SLCRS in postaccident configuration, the required negative pressure in the secondary containment boundary is achieved in 50 seconds from the time of simulated emergency diesel generator breaker closure. Time delays of dampers and logic delays must be accounted for in this surveillance. The time to achieve the required negative pressure is 60 seconds, with a loss-of-offsite power coincident with a SIS. The surveillance verifies that one train of SLCRS in conjunction with the ABF system will produce a negative pressure of 0.25 inch water gauge relative to the outside atmosphere in the secondary containment boundary. This ensures that the secondary containment will remain slightly negative relative to outside during postulated changes in atmospheric conditions.

For the purpose of this surveillance requirement, the secondary containment boundary will include the area within all contiguous buildings (i.e., the auxiliary building, main steam valve building (partially), hydrogen recombiner building (partially), and engineered safety features building (partially)), including the enclosure building (excluding the air volume at elevations higher than the SLCRS suction ductwork in the enclosure building). The pressure in the volume above the SLCRS suction ductwork in the enclosure building could be positive with respect to the outside. However, the effect of the exfiltration from the upper levels of the enclosure would be insignificant on the offsite doses.

PLANT SYSTEMS

The charging pump/reactor plant component cooling water pump ventilation system must be operational to ensure operability of the auxiliary building filter system and the supplementary leak collection and release system

BASES

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM (Continued)

component cooling water pump and heat exchanger areas following a LOCA are filtered prior to reaching the environment. Operation of the system with the heaters operating 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 assumed in the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

3/4.7.10 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. For the purpose of declaring the affected system OPERABLE with the inoperable snubber(s), an engineering evaluation may be performed, in accordance with Section 50.59 of 10 CFR Part 50.

Snubbers are classified and grouped by design and manufacturer but not by size. Snubbers of the same manufacturer but having different internal mechanisms are classified as different types. 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 Plant Operations Review Committee. 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 deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system during an earthquake or severe transient. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on a safety-related system, it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failure during an assumed initiating event. Inspections performed before that interval

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Attachment 2

Millstone Unit No. 3
Proposed Revision to Technical Specifications
Supplementary Leak Collection and Release System
Retyped Pages

July 1993

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent Supplementary Leak Collection and Release Systems shall be OPERABLE with each system comprised of:

- a. one OPERABLE filter and fan, and
- b. one OPERABLE Auxiliary Building Filter System as defined in Specification 3.7.9.

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

ACTION:

With one Supplementary Leak Collection and Release 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 REQUIREMENT

4.6.6.1 Each Supplementary Leak Collection and Release 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 a system flow rate of 7600 cfm to 9800 cfm and 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 charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1) Verifying that the 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 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 7600 cfm to 9800 cfm;

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENT (Continued)

- 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 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%; and
- 3) Verifying a system flow rate of 7600 cfm to 9800 cfm during system operation when tested in accordance with ANSI N510-1980.

CONTAINMENT SYSTEMS

SRVEILLANCE REQUIREMENT (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,* 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%:

- 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 6.25 inches Water Gauge while operating the system at a flow rate of 7600 cfm to 9800 cfm,
 - 2) Verifying that the system starts on a Safety Injection test signal,
 - 3) Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch Water Gauge in the secondary containment boundary within 50 seconds after a start signal, and
 - 4) Verifying that the heaters dissipate 50 ± 5 kW when tested in accordance with ANSI N510-1980.

- 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 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 7600 cfm to 9800 cfm; and

- f. After each complete or partial replacement of a charcoal 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 an acceptable test gas while operating the system at a flow rate of 7600 cfm to 9800 cfm.

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENT (Continued)

- 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 1120 cfm \pm 20%; and
- g. After each complete or partial replacement of a charcoal 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 an acceptable test gas while operating the system at a flow rate of 1120 cfm \pm 20%.

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

PLANT SYSTEMS

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9 Two independent Auxiliary Building Filter Systems shall be OPERABLE with each system comprised of:

- a. one OPERABLE filter and fan, and
- b. one OPERATIONAL Charging Pump/Reactor Plant Component Cooling Water Pump Ventilation System.

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

ACTION:

With one Auxiliary Building Filter 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. In addition, comply with the ACTION requirements of Specification 3.6.6.1.

SURVEILLANCE REQUIREMENT

4.7.9 Each Auxiliary Building Filter 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 a system flow rate of 30,000 cfm $\pm 10\%$ and 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 charcoal 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 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 $\pm 10\%$;
 - 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 2, March 1978,* meets the laboratory

PLANT SYSTEMS

SURVEILLANCE REQUIREMENT

- 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%; and
- 3) Verifying a system flow rate of 30,000 cfm $\pm 10\%$ during system operation when tested in accordance with ANSI N510-1980.
- 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,* 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%;
 - 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 6.8 inches Water Gauge while operating the system at a flow rate of 30,000 cfm $\pm 10\%$,
 - 2) Verifying that the system starts on a Safety Injection test signal, and
 - 3) Verifying that the heaters dissipate 180 ± 18 kW when tested in accordance with ANSI N510-1980.
 - 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 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 30,000 cfm $\pm 10\%$; and
 - f. After each complete or partial replacement of a charcoal 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 an acceptable test gas while operating the system at a flow rate of 30,000 cfm $\pm 10\%$.

*ANSI N510-180 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

CONTAINMENT SYSTEMS

BASES

3/4.6.6 SECONDARY CONTAINMENT

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM

Background

The OPERABILITY of the Supplementary Leak Collection and Release System (SLCRS) ensures that radioactive materials that leak from the primary containment into the secondary containment following a Design Basis Accident (DBA) are filtered out and adsorbed prior to any air release to the environment. The design of the SLCRS is to achieve a negative pressure of 0.25 inch water gauge within the secondary containment boundary within one minute of a DBA. The secondary containment boundary is comprised of the containment enclosure building (excluding the air volume above the SLCRS suction ductwork in the enclosure building) and all contiguous buildings (main steam valve building (partially), engineered safety features building (partially), hydrogen recombiner building (partially) and auxiliary building). To accomplish this, the SLCRS works in conjunction with the Auxiliary Building Filter (ABF) system (see Section 3/4.7.9). The pressure in the volume above the SLCRS suction ductwork in the enclosure building may be positive with respect to the outside. However, the effect of the exfiltration from the upper levels of the enclosure would be insignificant on the site doses. The SLCRS and the ABF fans and filtration units are located in the auxiliary building. The SLCRS is described in the Millstone Unit No. 3 FSAR, Section 6.2.3.

Applicable Safety Analyses

The SLCRS design basis is established by the consequences of the limiting DBA, which is a LOCA. The accident analysis assumes that only one train of the SLCRS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction of the airborne radioactive material provided by the remaining one train of this filtration system. The amount of fission products available for release from the containment is determined for a LOCA.

The SLCRS is not normally in operation. The SLCRS starts on a SIS signal. The modeled SLCRS actuation in the safety analysis (the Millstone 3 FSAR Chapter 15, Section 15.6) is based upon a worst-case response time following an SI initiated at the limiting setpoint. One train of the SLCRS in conjunction with the ABF system is capable of drawing a negative pressure (-0.25 inch water gauge) within 60 seconds after a LOCA. This time includes diesel generator startup and sequencing time, system startup time, and time for the system to attain the required negative pressure after starting.

CONTAINMENT SYSTEMS

BASES

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

LCO

In the event of a DBA, one SLCRS is required to provide the minimum postulated iodine removal assumed in the safety analysis. Two trains of the SLCRS must be OPERABLE to ensure that at least one train will operate, assuming that the other train is disabled by a single-active failure. The SLCRS works in conjunction with the ABF system. Inoperability of one train of the ABF system also results in inoperability of the corresponding train of the SLCRS. Therefore, whenever LCO 3.7.9 is entered due to the ABF train A (B) being inoperable, LCO 3.6.6.1 must be entered due to the SLCRS train A (B) being inoperable.

Applicability

In MODES 1, 2, 3, and 4, a DBA could lead to a fission product release to containment that leaks to the secondary containment boundary. The large break LOCA, on which this system's design is based, is a full-power event. Less severe LOCAs and leakage still require the system to be OPERABLE throughout these MODES. The probability and severity of a LOCA decrease as core power and reactor coolant system pressure decrease. With the reactor shut down, the probability of release of radioactivity resulting from such an accident is low.

In MODES 5 and 6, the probability and consequences of a DBA are low due to the pressure and temperature limitations in these MODES. Under these conditions, the SLCRS is not required to be OPERABLE.

ACTIONS

With one SLCRS train inoperable, the inoperable train must be restored to OPERABLE status within 7 days. The operable train is capable of providing 100 percent of the iodine removal needs for a DBA. The 7-day Completion Time is based on consideration of such factors as the reliability of the OPERABLE redundant SLCRS train and the low probability of a DBA occurring during this period. The Completion Time is adequate to make most repairs. If the SLCRS cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and MODE 5 within the following 30 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full-power conditions in an orderly manner and without challenging plant systems.

CONTAINMENT SYSTEMS

BASES

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

Surveillance Requirements

a

Cumulative operation of the SLCRS with heaters operating 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 31-day frequency was developed in consideration of the known reliability of fan motors and controls. This test is performed on a STAGGERED TEST BASIS once per 31-days.

b, c, e, and f

These surveillances verify that the required SLCRS filter testing is performed in accordance with Regulatory Guide 1.52, Revision 2. ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2. The surveillances include testing HEPA filter performance, charcoal adsorber efficiency, system flow rate, and the physical properties of the activated charcoal (general use and following specific operations).

d

The automatic startup ensures that each SLCRS train responds properly. The 18-month frequency is based on the need to perform this surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance were performed with the reactor at power. The surveillance verifies that the SLCRS starts on a SIS test signal. It also includes the automatic functions to isolate the other ventilation systems that are not part of the safety-related postaccident operating configuration and to start up and to align the ventilation systems that flow through the secondary containment to the accident condition.

- The main steam valve building ventilation system isolates.
- Auxiliary building ventilation (normal) system isolates.
- Charging pump/reactor plant component cooling water pump area cooling subsystem aligns and discharges to the auxiliary building filters.
- Hydrogen recombiner ventilation system aligns to the postaccident configuration.
- The engineered safety features building ventilation system aligns to the postaccident configuration.

CONTAINMENT SYSTEMS

BASES

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

With the SLCRS in postaccident configuration, the required negative pressure in the secondary containment boundary is achieved in 50 seconds from the time of simulated emergency diesel generator breaker closure. Time delays of dampers and logic delays must be accounted for in this surveillance. The time to achieve the required negative pressure is 60 seconds, with a loss-of-offsite power coincident with a SIS. The surveillance verifies that one train of SLCRS in conjunction with the ABF system will produce a negative pressure of 0.25 inch water gauge relative to the outside atmosphere in the secondary containment boundary. This ensures that the secondary containment will remain slightly negative relative to outside during postulated changes in atmospheric conditions.

For the purpose of this surveillance requirement, the secondary containment boundary will include the area within all contiguous buildings (i.e., the auxiliary building, main steam valve building (partially), hydrogen recombiner building (partially), and engineered safety features building (partially)), including the enclosure building (excluding the air volume at elevations higher than the SLCRS suction ductwork in the enclosure building). The pressure in the volume above the SLCRS suction ductwork in the enclosure building could be positive with respect to the outside. However, the effect of the exfiltration from the upper levels of the enclosure would be insignificant on the offsite doses.

3/4.6.6.2 ENCLOSURE BUILDING INTEGRITY

Secondary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the primary containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with operation of the Supplementary Leak Collection and Release System, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.6.3 ENCLOSURE BUILDING STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment enclosure building will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to provide an annulus surrounding the steel vessel that can be maintained at a negative pressure during accident conditions. A visual inspection is sufficient to demonstrate this capability.

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BASES

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM (Continued)

component cooling water pump and heat exchanger areas following a LOCA are filtered prior to reaching the environment. The charging pump/reactor plant component cooling water pump ventilation system must be operational to ensure operability of the auxiliary building filter system and the supplementary leak collection and release system. Operation of the system with the heaters operating 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 assumed in the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

3/4.7.10 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. For the purpose of declaring the affected system OPERABLE with the inoperable snubber(s), an engineering evaluation may be performed, in accordance with Section 50.59 of 10 CFR Part 50.

Snubbers are classified and grouped by design and manufacturer but not by size. Snubbers of the same manufacturer but having different internal mechanisms are classified as different types. 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 Plant Operations Review Committee. 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 deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system during an earthquake or severe transient. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on a

PLANT SYSTEMS

BASES

3/4.7.10 SNUBBERS (Continued)

safety-related system, it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failure during an assumed initiating event. Inspections performed before that interval