

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Two independent control room emergency air cleanup systems shall be OPERABLE.

APPLICABILITY: ALL MODES.

ACTION:

MODES 1, 2, 3 and 4:

With one control room emergency air cleanup 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 (during irradiated fuel movement, or movement of loads over irradiated fuel):

- a. With one control room emergency air cleanup system inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the control room emergency ventilation system in the recirculation mode.
- b. With both control room emergency air cleanup systems inoperable, suspend all operations involving the movement of irradiated fuel or movement of loads over irradiated fuel.
- c. The provisions of Specification 3.0.3 are not applicable in MODE 6.

SURVEILLANCE REQUIREMENTS

4.7.7 Each control room emergency 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 120°F.
- b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the pressurization and recirculation system HEPA filters and charcoal adsorbers and verifying that the system has operated for at least 10 hours with the heaters on during the past 31 days.
- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release that could have contaminated the charcoal adsorbers or HEPA filters in any ventilation zone communicating with the system by:

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SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria of greater than or equal to 99.5% filter efficiency while operating the system at a flow rate indicated in Note 1 and using the following test procedures:
 - (a) A visual inspection of the control room emergency air cleanup system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980.
 - (b) An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980.
 - (c) A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.
2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing efficiencies criteria given in Note 2 when tested with methyl iodide at 80°C and 70% relative humidity.
3. Verifying a system flow rate as indicated in Note 1 during system operation when tested in accordance with Section 8 of ANSI N510-1980.
- d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing efficiencies criteria given in Note 2 when tested with methyl iodide at 80°C and 70% relative humidity.
- e. At least once per 18 months by:
 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate indicated in Note 1.
 2. Verifying that the filter train starts on a Safety Injection Actuation test signal.#

Surveillance Requirement 4.7.7.e.2 does not apply in MODES 5 and 6.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch water guage relative to the outside atmosphere during system operation.
4. Verifying that the heaters dissipate 7.5 ± 0.8 kw when tested in accordance with Section 14 of ANSI N510-1980.
- f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.5% of the DOP when they are tested in-place in accordance with Section 10 of ANSI N510-1980 while operating the system at a flow rate indicated in Note 1.
- g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.5% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the system at a flow rate indicated in Note 1.

Note 1.	a. Control Room Recirculation Filter Unit	2000 cfm \pm 10%
	b. Control Room Filter Unit	1000 cfm \pm 10%
	c. Control Room Pressurization Filter Unit	300 cfm \pm 10%
Note 2.	a. Control Room Recirculation Filter Unit	$> 99\%$
	b. Control Room Filter Unit	$> 99\%$
	c. Control Room Pressurization	$> 99.825\%$

PLANT SYSTEMS

3/4.7.8 PENETRATION ROOM FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.8 Two independent penetration room filtration systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one penetration room filtration system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8 Each penetration room filtration system shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, the flow through the HEPA filters and charcoal adsorbers and verifying that the system has operated for at least 10 hours with the heaters on during the past 31 days.
- 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 that could have contaminated the charcoal adsorbers or HEPA filters in any ventilation zone communicating with the system by:
 1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria of greater than or equal to 99.5% filter efficiency while operating the system at a flow rate of 5000 cfm \pm 10 percent and using the following test procedures:
 - (a) A visual inspection of the penetration room filtration system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980.
 - (b) An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980.
 - (c) A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.

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SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 95% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
 3. Verifying a system flow rate of 5000 cfm \pm 10% during system operation when tested in accordance with Section 8 of 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 Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 95% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks of less than 6 inches Water Gauge while operating the system at a flow rate of 5000 cfm \pm 10%.
 2. Verifying that the system starts on a Phase B Isolation test signal.
 3. Verifying that the heaters dissipate 25 \pm 2.5 kw when tested in accordance with Section 14 of ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.5% of the DOP when they are tested in-place in accordance with Section 10 of ANSI N510-1980 while operating the system at a flow rate of 5000 cfm \pm 10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.5% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the system at a flow rate of 5000 cfm \pm 10%.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria of greater than or equal to 99.5% filter efficiency while operating the main purge system and using the following test procedures:
 - (a) A visual inspection of the containment purge exhaust filter system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980.
 - (b) An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980.
 - (c) A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.
2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 90% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
 - b. After every 12 months of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 90% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
 - c. At least once per 18 months by verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the main purge system.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- d. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.5% of the DOP when they are tested in-place in accordance with Section 10 of ANSI N510-1980.
- e. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.5% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the main purge system.

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APPLICABILITY: ALL MODES.

ACTION:

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- b. With both control room emergency air cleanup systems inoperable, suspend all operations involving the movement of irradiated fuel or movement of loads over irradiated fuel.
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- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release that could have contaminated the charcoal adsorbers or HEPA filters in any ventilation zone communicating with the system by:

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria of greater than or equal to 99.5% filter efficiency while operating the system at a flow rate indicated in Note 1 and using the following test procedures:
 - (a) A visual inspection of the control room emergency air cleanup system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980.
 - (b) An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980.
 - (c) A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.
2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing efficiencies criteria given in Note 2 when tested with methyl iodide at 80°C and 70% relative humidity.
3. Verifying a system flow rate as indicated in Note 1 during system operation when tested in accordance with Section 8 of ANSI N510-1980.
- d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing efficiencies criteria given in Note 2 when tested with methyl iodide at 80°C and 70% relative humidity.
- e. At least once per 18 months by:
 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate indicated in Note 1.
 2. Verifying that the filter train starts on a Safety Injection Actuation test signal.#

Surveillance Requirement 4.7.7.e.2 does not apply in MODES 5 and 6.

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SURVEILLANCE REQUIREMENTS (Continued)

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 the outside atmosphere during system operation.
4. Verifying that the heaters dissipate 7.5 ± 0.8 kw when tested in accordance with Section 14 of ANSI N510-1980.
- f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.5% of the DOP when they are tested in-place in accordance with Section 10 of ANSI N510-1980 while operating the system at a flow rate indicated in Note 1.
- g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.5% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the system at a flow rate indicated in Note 1.

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4.7.8 Each penetration room filtration system shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, the flow through the HEPA filters and charcoal adsorbers and verifying that the system has operated for at least 10 hours with the heaters on during the past 31 days.
- 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 that could have contaminated the charcoal adsorbers or HEPA filters in any ventilation zone communicating with the system by:
 1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria of greater or equal to 99.5% filter efficiency while operating the system at a flow rate of 5000 cfm \pm 10 percent and using the following test procedures:
 - (a) A visual inspection of the penetration room filtration system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980.
 - (b) An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980.
 - (c) A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 95% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
3. Verifying a system flow rate of $5000 \text{ cfm} \pm 10\%$ during system operation when tested in accordance with Section 8 of 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 Section 13 of ANSI N510-1980 meets the laboratory testing criteria of greater than or equal to 95% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
- d. At least once per 18 months by:
 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks of less than 6 inches Water Gauge while operating the system at a flow rate of $5000 \text{ cfm} \pm 10\%$.
 2. Verifying that the system starts on a Phase B Isolation test signal.
 3. Verifying that the heaters dissipate $25 \pm 2.5 \text{ kw}$ when tested in accordance with Section 14 of ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.5% of the DOP when they are tested in-place in accordance with Section 10 of ANSI N510-1980 while operating the system at a flow rate of $5000 \text{ cfm} \pm 10\%$.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.5% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the system at a flow rate of $5000 \text{ cfm} \pm 10\%$.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria of greater than or equal to 99.5% filter efficiency while operating the main purge system and using the following test procedures.
 - (a) A visual inspection of the containment purge exhaust filter system shall be made before each DOP test or activated carbon adsorber section leak test in accordance with Section 5 of ANSI N510-1980.
 - (b) An in-place DOP test for the HEPA filters shall be performed in accordance with Section 10 of ANSI N510-1980.
 - (c) A charcoal adsorber section leak test with a gaseous halogenated hydrocarbon refrigerant shall be performed in accordance with Section 12 of ANSI N510-1980.
2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 90% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
 - b. After every 12 months of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Section 13 of ANSI N510-1980 meets the laboratory testing criterion of greater than or equal to 90% efficiency when tested with methyl iodide at 80°C and 70% relative humidity.
 - c. At least once per 18 months by verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the main purge system.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- d. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99.5% of the DOP when they are tested in-place in accordance with Section 10 of ANSI N510-1980.
- e. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.5% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with Section 12 of ANSI N510-1980 while operating the main purge system.