

REFUELING OPERATIONS

3/4.9.12 FUEL HANDLING AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 The Fuel Handling Area ventilation system shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the storage pool.

ACTION:

- a. With no Fuel Handling Area ventilation system OPERABLE, suspend all operations involving movement of fuel within the storage pool or crane operation with loads over the storage pool until the Fuel Handling Area ventilation system is restored to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required ventilation system shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:
 1. Verifying that with the ventilation system operating at a flow rate of 19,490 cfm \pm 10% and exhausting through the HEPA filters and charcoal adsorbers, the total bypass flow of the ventilation system to the facility vent, including leakage through the ventilation system diverting valves, is \leq 1% when the ventilation system is tested by admitting cold DOP at the storage pool ventilation system intake.

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SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the charcoal adsorbers remove $\geq 99\%$ of a halogenated hydrocarbon refrigerant test gas and that the HEPA filter banks remove $\geq 99\%$ of the DOP when they are tested in-place using the test procedure guidance of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978 (except for the provisions of ANSI N510 Sections 8 and 9), and the system flow rate is $19,490 \text{ cfm} \pm 10\%$.
3. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.
4. Verifying a system flow rate of $19,490 \text{ cfm} \pm 10\%$ during system operation.

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d.

After every 720 hours of charcoal adsorber operation by ~~e~~ verifying within 31 days after removal that a laboratory analysis of a representative carbon sample ~~obtained in accordance with~~ demonstrates 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. A removal efficiency of $\geq 90\%$ methyl iodine when tested at 30°C and 95% R.H. in accordance with ANSI D-3803 Revision 1989.

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 or equal to 4 inches Water Gauge while operating the system at a flow rate of $19,490 \text{ cfm} \pm 10\%$.
2. Verifying that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks.
3. Verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to $1/8$ inches Water Gauge relative to the outside atmosphere during system operation.

e. AT least once per 18 months by verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to $1/8$ inches Water Gauge relative to the outside atmosphere during system operation.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- 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% of the DOP when they are tested in-place while operating the system at a flow rate of 19,490 cfm \pm 10%.
- 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% of a halogenated hydrocarbon refrigerant test gas when they are in-place tested while operating the system at a flow rate of 19,490 cfm \pm 10%.

REFUELING OPERATIONS

BASES

3/4.9.9 CONTAINMENT PURGE AND PRESSURE-VACUUM RELIEF ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

3/4.9.10 and 3/4/9/11 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 gas activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.12 FUEL HANDLING AREA VENTILATION SYSTEM

The limitations on the fuel handling ^{a dropped} area ventilation system ensure that all radioactive material released from ~~an~~ irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the accident analyses. ANSI N510-1975 and Generic Letter 83-13 should be used as procedural guidelines for surveillance testing.

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REFUELING OPERATIONS

FUEL HANDLING AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 The Fuel Handling Area ventilation system shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the storage pool.

ACTION:

- a. With no Fuel Handling Area ventilation system OPERABLE, suspend all operations involving movement of fuel within the storage pool or crane operation with loads over the storage pool until the Fuel Handling Area ventilation system is restored to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required ventilation system shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system, by:
 1. Verifying that with the ventilation system operating at a flow rate of 19,490 cfm + 10% and exhausting through the HEPA filters and charcoal adsorbers, the total bypass flow of the ventilation system to the facility vent, including leakage through the ventilation system diverting valves, is < 1% when the ventilation system is tested by admitting cold DOP at the storage pool ventilation system intake.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the charcoal adsorbers remove $\geq 99\%$ of a halogenated hydrocarbon refrigerant test gas when they are tested in-place while operating the ventilation system at a flow rate of 19,490 cfm $\pm 10\%$.
 3. Verifying that the HEPA filter banks remove $> 99\%$ of the DOP when they are tested in-place while operating the ventilation system at a flow rate of 19,490 cfm $\pm 10\%$.
 4. Verifying within 31 days after removal that a laboratory analysis of a carbon sample from either at least one test canister or at least two carbon samples from one of the charcoal adsorbers demonstrates a removal efficiency of $> 90\%$ for radioactive methyl iodide when the sample is tested at 130°C, 95% R. H. The carbon samples not obtained from test canisters shall be prepared by either:
 - (a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or
 - (b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to thickness of the bed.
 5. Verifying a system flow rate of 19,490 cfm, $\pm 10\%$ during system operation.
- c. After every 720 hours of charcoal adsorber operation by either:
1. Verifying within 31 days after removal that a laboratory analysis of a carbon sample obtained from a test canister demonstrates a removal efficiency of $\geq 90\%$ for radioactive methyl iodide when the sample is tested at 130°C, 95% R.H.; or
 2. Verifying within 31 days after removal that a laboratory analysis of at least two carbon samples demonstrate a removal efficiency of $\geq 90\%$ for radioactive methyl iodide when the samples are tested at 130°C, 95% R.H. and the samples are prepared by either:

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or
- b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

Subsequent to reinstalling the adsorber tray used for obtaining the carbon sample, the system shall be demonstrated OPERABLE by also:

- a) Verifying that the charcoal adsorbers remove $\geq 99\%$ of a halogenated hydrocarbon refrigerant test gas when they are tested in-place while operating the ventilation system at a flow rate of $19,490 \text{ cfm} \pm 10\%$, and
 - b) Verifying that the HEPA filter banks remove $\geq 99\%$ of the DOP when they are tested in-place while operating the ventilation system at a flow rate of $19,490 \text{ cfm} \pm 10\%$.
- d. At least once per 18 months by:
- 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is ≤ 4 inches Water Gauge while operating the ventilation system at a flow rate of $19,490 \text{ cfm} \pm 10\%$.
 - 2. Verifying that the air flow distribution is uniform within 20% across HEPA filters and charcoal adsorbers.
 - 3. Verifying that on a high radiation test signal, the system automatically directs its exhaust flow through the HEPA filters and charcoal adsorber banks.
 - 4. Verifying that the ventilation system maintains the spent fuel storage pool area at a negative pressure of $\geq 1/8$ inches Water Gauge relative to the outside atmosphere during system operation.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq 99\%$ of the DOP when they are tested in-place while operating the filter train at a flow rate of $19,490 \text{ cfm} \pm 10\%$.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq 99\%$ of a halogenated hydrocarbon refrigerant test gas when they are tested in-place while operating the filter train at a flow rate of $19,490 \text{ cfm} \pm 10\%$.

e
Unit 1, surveillance 4.9.12 is to be
Replaced with Unit 2. surveillance 4.9.12.
AS provided in the marked up pages.

REFUELING OPERATIONS

BASES

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