3.0 LIMITING CONDITIONS FOR OPERATION

B. Control Room Air Treatment System

1. Except as specified in Specification 3.0.B.3 below, the control room air treatment system and the diesel generators required for operation of this system shall be operable at all times when containment integrity is required.

2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show ≥99% DOP removal and ≥99% halogenated hydrocarbon removal.

   b. The results of laboratory carbon sample analysis shall show ≥90% radioactive methyl iodide removal at a velocity within 20% of system design, 0.05 to 0.15 mg/m^3 inlet iodide concentration, ≥95% R.H. and ≥125°F.

   c. Fans shall be shown to operate within ±10% design flow.

4.0 SURVEILLANCE REQUIREMENTS

B. Control Room Air Treatment System

1. At least once per operating cycle, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 6 inches of water at system design flow rate.

2. a. The tests and sample analysis of Specification 3.0.B.2 shall be performed initially and at least once per year for standby service or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.

   b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

   c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

   d. Each circuit shall be operated at least 10 hours every month.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
3. From and after the date that the control room air treatment system is made or found to be inoperable for any reason, reactor operation or refueling operations is permissible only during the succeeding seven days unless such circuit is sooner made operable.	3. At least once per operating cycle automatic initiation of the control room air treatment system shall be demonstrated.
4. If these conditions cannot be met, reactor shutdown shall be initiated and the reactor shall be in cold shutdown within 24 hours for reactor operations and refueling operations shall be terminated immediately.	

Bases

3.0.B. Control Room Air Treatment System

The control room air treatment system is designed to filter the control room atmosphere for intake air and/or for recirculation during control room isolation conditions. The control room air treatment system is designed to automatically start upon control room isolation and to maintain the control room pressure to the design positive pressure so that all leakage should be out leakage.

High efficiency particulate absolute (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential intake of radioiodine to the control room. The in-place test results should indicate a system leak tightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of least 99 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 90 percent for expected accident conditions. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the allowable levels stated in Criterion 19 of the General Design Criteria for Nuclear Power Plants, Appendix A to 10 CFR Part 50. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers.

If the system is found to be inoperable, there is not immediate threat to the control room and reactor operation or refueling operation may continue for a limited period of time while repairs are being made. If the system cannot be repaired within seven days, the reactor is shutdown and brought to cold shutdown within 24 hours or refueling operations are terminated.

Bases

4.0.B Control Room Air Treatment System

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop should be determined at least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Tests of the charcoal adsorbers with halogenated hydrocarbon shall be performed in accordance with USAEC Report -1082. Iodine removal efficiency tests shall follow RDT Standard M-16-1T. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced with an adsorbent qualified according to Table 1 of Regulatory Guide 1.52. The replacement tray for the adsorber tray removed for the test should meet the same adsorbent quality. Tests of the HEPA filters with DOP aerosol shall be performed in accordance to ANSI N101.1-1972. Any HEPA filters found defective shall be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52.

Operation of the system for 10 hours every month will demonstrate operability of the filters and adsorber system and remove excessive moisture built up on the adsorber.

If significant painting, fire or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals or foreign materials, the same tests and sample analysis shall be performed as required for operational use. The determination of significant shall be made by the operator on duty at the time of the incident. Knowledgeable staff members should be consulted prior to making this determination.

Demonstration of the automatic initiation capability is necessary to assure system performance capability.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
B. Emergency Air Treatment Systems	B. Emergency Air Treatment Systems
1. Except as specified in Specification 3.0.B.4 below, circuits of any emergency air treatment system and the diesel generators required for operation of such circuits shall be operable at all times when the systems may be required.	1. At least once per operating cycle, the following conditions shall be demonstrated.
	a. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at system design flow rate.
	b. Air distribution is uniform within 20% across HEPA filters and charcoal adsorbers.
(S) 2. a. The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show >99% DOP removal and ≥99% halogenated hydrocarbon removal.	2. a. The tests and sample analysis of Specification 3.0.B.2 for the post-accident purge air treatment system shall be performed initially and each refueling outage not to exceed 18 months or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.
b. The results of laboratory carbon sample analysis from the post-accident purge system carbon shall show ≥90% radioactive methyl iodide removal at a velocity within 20 percent of the post-accident purge air treatment system design, 0.15 to 0.5 mg/m^3 inlet methyl iodide concentration, ≥95% R. H. and ≥190°F.	b. The tests and sample analysis of Specification 3.0.B.2 for the fuel handling air treatment system shall be performed initially and at least once per year for standby service or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
c. The results of laboratory carbon sample analysis from the fuel handling system carbon shall show ≥90% radioactive methyl iodide removal at a velocity within 20 percent of fuel handling air treatment system design, 0.05 to 0.15 mg/m^3 inlet methyl iodide concentration, ≥95% R.H. and ≥125°F.	c. The tests and sample analysis of Specification 3.0.B.2 for the in-containment air treatment system shall be performed initially and each refueling outage not to exceed 18 months or after every 720 hours of system operation and following significa painting, fire or chemical release in any ventilation zone communica g with the system.
d. The results of laboratory carbon sample analysis from the in-containment system carbon shall show ≥85% radioactive methyl iodide removal at a velocity within 20 percent of in-containment system design, 5 to 15 mg/m^3 inlet methyl iodide concentration, ≥95% R.H. and ≥250°F.	d. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance on the system housing.
e. All emergency air treatment system fans shall be shown to operate within ±10% of design flow.	e. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the system housing.
	f. Each circuit shall be operated at least 10 hours every month.

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3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
3. The total fuel handling standby air treatment system bypass flow shall not exceed 1 percent of the total system design flow rate under operating conditions.	3. Initially and at least once per year, the fuel handling standby air treatment system shall be tested with cold DOP for total system bypass of the filter banks.
4. a. From and after the date that one circuit of an in-containment air treatment system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other in-containment air treatment circuit shall be operable.	4. a. At least once per operating cycle automatic initiation of each branch of the emergency air treatment system shall be demonstrated.
b. From and after the date that one circuit of the post-accident purge air treatment system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless such circuit is sooner made operable, provided that during such thirty days all active components of the other post-accident purge air treatment circuit shall be operable.	b. At least once per operating cycle manual operability of the bypass valve for filter cooling shall be demonstrated.
5. a. From and after the date that the fuel handling air treatment system is made or found to be inoperable for any reason, fuel handling operations shall be terminated immediately.	c. When one circuit of the in-containment air treatment system becomes inoperable the other circuit shall be demonstrated to be operable immediately and daily thereafter.
b. If the conditions for the in-containment or post-accident purge air treatment system cannot be met, operations shall be terminated immediately and the reactor in the cold shutdown within 24 hours.	d. When one circuit of the post-accident purge air treatment system becomes inoperable the other circuit shall be demonstrated to be operable immediately and daily thereafter.

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Bases

3.0.B Emergency Air Treatment System

The in-containment air treatment system is designed to filter the containment building atmosphere during accident conditions. Both in-containment air treatment systems are designed to automatically start upon accident signals. Should one system fail to start, the redundant system is designed to start automatically. Each of the two systems has 100 percent capacity. The fuel handling air treatment system is designed to filter the refueling building atmosphere to the facility vent during refueling conditions. If the fuel handling air treatment system is on standby, the system is designed to filter the refueling building atmosphere to the facility vent during refueling accident conditions and is automatically started upon high radiation signal. Upon initiation isolation valves in the ventilation system must close to allow air flow through the air treatment system. If these valves do not close tightly, excessive bypass leakage could occur to negate the usefulness of the HEPA filters and charcoal adsorbers to reduce potential radioiodine releases to the atmosphere. Therefore, the bypass leakage for the total system has been limited to 1 percent.

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High efficiency particulate absolute (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers for all emergency air treatment systems. The charcoal adsorbers are installed to reduce the potential release of radioiodine to the environment. The in-place test results should indicate a system leak tightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 90 percent on the fuel handling system sample and at least 85 percent on the in-containment system samples for expected accident conditions. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the 10 CFR 100 guidelines for the accidents analyzed. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers.

Only one of the two in-containment air treatment systems is needed to cleanup the containment building atmosphere during accident conditions. If one system is found to be inoperable, there is not an immediate threat to the containment system performance and reactor operation may continue while repairs are being made. If neither circuit is operable, the plant is brought to a condition where the in-containment air treatment system would not be required. If the fuel handling air treatment system is found to be inoperable, all fuel handling and fuel movement operations will be terminated until the system is made operable.

Bases

4.0.B Emergency Air Treatment System

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and air distribution should be determined at least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Tests of the charcoal adsorbers with halogenated hydrocarbon refrigerant shall be performed in accordance with USAEC Report DP-1082. Iodine removal efficiency tests shall follow RDT Standard M-16-1T. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced with an adsorbent qualified according to Table 1 of Regulatory Guide 1.52. The replacement tray for the adsorber tray removed for the test should meet the same adsorbent quality. Tests of the HEPA filters with DOP aerosol shall be performed in accordance to ANSI N101.1-1972. Any HEPA filters found defective shall be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52. (9)

Operation of the emergency air treatment system each month for at least ten (10) hours will demonstrate operability of the filters and adsorber system and remove excessive moisture built up on the adsorber.

With the fuel handling standby air treatment system operating, DOP aerosol be admitted at the refueling building ventilation system intake. Detection of more than 1 percent DOP at the inlet to the facility vent shall be considered an unacceptable test result and the isolation valves repaired to prevent bypass leakage and test repeated.

If significant painting, fire or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals or foreign material, the same tests and sample analysis shall be performed as required for operational use. The determination of significant shall be made by the operator on duty at the time of the incident. Knowledgeable staff members should be consulted prior to making this determination.

Demonstration of the automatic initiation capability and operability of filter cooling is necessary to assure system performance capability. If one in-containment air treatment system is inoperable, the other system must be tested daily. This substantiates the availability of the operable system and thus reactor operation can continue for a limited period of time.