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(2-76)

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DESCRIPTION

Ltrnotarized 8-25-76....trans the following:

PLANT NAME:
Kewaunee

ENCLOSURE

Amdt to OL #16/Change to Tech Specs #18: Consisting of revisions to Appendix A with regard to surveillance programs.....

(40 cys encl rec'd)

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NRC FORM 195 (2-76)

WISCONSIN PUBLIC SERVICE CORPORATION Public Service

P.O. Box 1200, Green Bay, Wisconsin 54305

August 25, 1976

DOCKETED USNRC AUG 30 1976 U.S. NUCLEAR REGULATORY COMMISSION Mail Section

RECEIVED AUG 30 1976 U.S. NUCLEAR REGULATORY COMMISSION

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

ATTN: Mr. Al Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Gentlemen:

REF: Docket 50-305
Operating License DPR-43
Letter to Wisconsin Public Service Corporation from Mr. R. A. Purple dated December 29, 1975; letter to Mr. R. A. Purple from Mr. E. W. James dated February 4, 1976; meeting minutes of the June 15, 1976 meeting concerning Filter System Specification

Please find attached 40 copies of proposed Amendment No. 16 and Change No. 18 to the Kewaunee Technical Specifications. This proposed change is the result of the request for re-evaluation of the Kewaunee Technical Specification by the NRC in the December 29, 1975, letter, our response to that letter, and the subsequent referenced meeting between the technical staff of the NRC and ourselves. The attached proposed changes are consistent with the understanding which existed during the meeting as to the specific difficulties in applying the standard specification to the Kewaunee Plant and the desire on our part to provide a technically correct verification of system performance specification which satisfies current NRC requirements. We believe that these proposed specifications will provide the safety and surveillance required while allowing practical conformance.

These specifications include surveillance testing of the Shield Building Vent System by operating this system in its accident mode of operation for 10 hours each month. This system's designed purpose is to maintain a vacuum between the containment outer shell and the atmosphere following an accident and filter the exhaust from this evacuated shield building space, thereby, treating any containment leakage with HEPA filters and charcoal adsorber. The monitoring of this shield building discharge was and is considered not necessary and of no practical value post accident. Operation of this Shield Building Ventilation System during testing will result in a filtered discharge to the environment from a sealed dead air space within the plant. It is understood that the atmosphere within the shielding building

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will be characterized by at least three samples whose location will be chosen by the licensees to provide a reasonable indication of the shield building atmosphere contents. The Shield Building Vent discharge flow rate, the assumed performance characteristics of the system stated in the AEC Safety Evaluation for the Kewaunee Plant and the average shield building sample contents will be used to report effluent discharges due to this surveillance testing.

During the June 15, 1976, meeting, we agreed to perform one time air flow distribution measurements for the safeguard HEPA filters to characterize the air flow distribution of the Kewaunee filters. These tests were performed in late July and mid-August by a consultant organization. The measurements of air flow distribution were made at both upstream and downstream surface of the HEPA filter cells. Significant turbulence on the upstream surface was encountered on all filter systems. The downstream surface air flow distribution which is truly indicative of flow distribution was measured to have the following variations in flow distribution:

	Maximum Negative Variation	Maximum Positive Variation	σ
Shield Building Vent Train A pre-carbon HEPA	-6%	+5%	4%
Shield Building Vent Train A post-carbon HEPA	-3%	+3%	3%
Shield Building Vent Train B pre-carbon HEPA	-13%	+7%	9%
Shield Building Vent Train B post-carbon HEPA	-8%	+8%	6%
Special Ventilation Zone Train A pre-carbon HEPA	-10%	+7%	6%
Special Ventilation Zone Train B post-carbon HEPA	-5%	+7%	4%
Special Ventilation Zone Train B pre-carbon HEPA	-9%	+6%	5%
Special Ventilation Zone Train B post-carbon HEPA	-9%	+12%	8%
Spent Fuel Pool Exhaust Train A	-3%	+9%	5%
Spent Fuel Pool Exhaust Train B	-8%	+10%	7%

As indicated above, the safety related filters at the Kewaunee Plant have air flow distributions well within the ±20% allowed variation of ANSI-N510-1975.

Very truly yours,

E W James

E. W. James, Senior Vice President
Power Supply & Engineering

EWJ:sna
Attach.

Subscribed and Sworn to
Before Me This 25TH Day
of AUGUST 1976

Notary Public, State of Wisconsin

My Commission Expires
9-13-79

3.6 CONTAINMENT SYSTEM

Applicability

Applies to the integrity of the Containment System.

Objective

To define the operating status of the Containment System.

Specification

a. Containment System integrity shall not be violated if there is fuel in the reactor which has been used for power operation, except whenever either of the following conditions remains satisfied:

   1. The reactor is in the cold shutdown condition with the reactor vessel head installed, or

   2. The reactor is in the refueling shutdown condition.

b. All of the following conditions shall be satisfied whenever Containment System integrity as defined by Specification 1.0g is required:

   1. Both trains of the Shield Building Ventilation System, including filters and heaters shall be operable or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Shield Building Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days provided that the other train is demonstrated to be operable within 2 hours and daily thereafter.

   2. Both trains of the Auxiliary Building Special Ventilation System including filters and heaters shall be operable or the reactor shall be shut down within 12 hours, except that when one of the two trains of the Auxiliary Building Special Ventilation System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days provided that the other train

is demonstrated to be operable within 2 hours and daily thereafter.

3. Performance Requirements

   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 $\geq$99% DOP removal and $\geq$99% halogenated hydrocarbon removal when tested in accordance with the methodology of ANSI N510-1975 Sections 10 and 12.

   B. The results of laboratory carbon sample analysis from the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System carbon shall show $\geq$99% radioactive methyl iodide removal when tested in accordance with ANSI N510-1975 Section 13 at conditions of 130° C, 95% RH for the Shield Building Ventilation System and 66° C, 95% RH for the Auxiliary Building Special Ventilation System.

   C. Fans shall operate within ±10% of design flow when tested.

c. If the internal pressure of the Reactor Containment Vessel exceeds 2 psi, the condition shall be corrected within eight hours or the reactor shall be placed in a subcritical condition.

d. The reactor shall not be taken above the cold shutdown condition unless the containment ambient temperature is greater than 40° F.

Basis

Proper functioning of the Shield Building Ventilation System is essential to the performance of the Containment System. Therefore, except for reasonable periods of maintenance outage for one redundant train of equipment, the complete system should be in readiness whenever Containment System integrity is required. Proper functioning of the Auxiliary Building Special Ventilation System is similarly necessary to preclude possible unfiltered leakage through penetrations that en[illegible] the Special Ventilation Zone [illegible]one SV).

Both the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System are designed to automatically start following a safety injection signal. Each of the two trains of both systems has 100% capacity. If one train of either 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 both trains of either system are inoperable, the plant will be brought to a condition where the air purification system would not be required.

High efficiency particulate air (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential radioiodine release to the atmosphere. Bypass leakage for the charcoal adsorbers and particulate removal efficiency for HEPA filters are determined by halogenated hydrocarbon and DOP respectively. The laboratory carbon sample test results indicate a radioactive methyl iodide removal efficiency for expected accident conditions. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal absorbers. The performance criteria for the safeguard ventilation fans are stated in Section 5.5 and 9.6 of the FSAR. If the performances are as specified, the calculated doses would be less than the guidelines stated in 10 CFR Part 100 for the accidents analyzed.

The cold shutdown condition precludes any energy releases or buildup of containment pressure from flashing of reactor coolant in the event of a system break. The restriction to fuel that has been irradiated during power operation allows initial testing with an open containment when negligible activity exists. The shutdown margin for the cold shutdown condition assures subcriticality with the vessel closed even if the most reactive RCC assembly were inadvertently withdrawn. Therefore, the two parts of Specification 3.6.a allow Containment System integrity to be violated when a fission product inventory is present only under circumstances that preclude both criticality and release of stored energy.

When the reactor vessel head is removed with the Containment System integrity violated, the reactor must not only be in the cold shutdown condition, but also in the refueling shutdown condition. This 10% shutdown margin prevents the occurrence of criticality under any circumstances, even when fuel is being moved during refueling operations. The requirement of a 40°F minimum containment ambient temperature is to assure that the minimum vessel metal temperature is well above NDTT + 30° criterion for the shell material.

This specification also prevents positive insertion of reactivity whenever Containment System integrity is not maintained if such addition would violate the respective shutdown margins. Effectively, the boron concentration must be maintained at a predicted concentration of 2000 ppm(1) or more if the Containment System is to be disabled with the reactor pressure vessel open.

The filter systems of the Kewaunee Plant were installed and operating prior to ANSI 510 development and do not conform to all the design criteria of ANSI 510. The tests required by the specifications are those to prove system performance of installed systems. The prerequisite tests to sections 10 and 12 are not required for these assemblies.

The 2 psi limit on internal pressure provides adequate margin between the maximum internal pressure of 46 psig and the peak accident pressure of 42.2 psig resulting from the postulated Design Basis Accident.(2)

The Reactor Containment Vessel is designed for 0.8 psi internal vacuum, the occurrence of which will be prevented by redundant vacuum breaker systems.

References:
(1) FSAR Table 3.2-1
(2) FSAR Section 5

6. Direct communication between the control room and the operating floor of the containment shall be available whenever changes in core geometry are taking place.

7. No heavy loads will be transported over or placed in either part of the spent fuel pool when spent fuel is stored in that part.

8. The containment ventilation and purge system, including the radiation monitors which initiate containment ventilation isolation, shall be tested and verified to be operable immediately prior to a refueling operation.

9. A. The spent fuel pool sweep system, including the charcoal adsorbers shall be operable during fuel handling. If the spent fuel pool sweep system is not operable, fuel movement shall not be started (any fuel assembly movement in progress may be completed).

   B. Performance Requirements

      (1) 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 when tested in accordance with the methodology of ANSI N510-1975 Sections 10 and 12.

      (2) The results of laboratory carbon sample analysis from spent fuel pool sweep system carbon shall show ≥99% radioactive methyl iodide removal when tested in accordance with ANSI N510-1975 Section 13 at conditions of 66°C and 95% RH.

      (3) Fans shall operate within ±10% of design flow when tested.

10. The minimum water level above the vessel flange shall be maintained at 23 feet, except during initial core loading.

11. A dead-load test shall be successfully performed on both the fuel handling and manipulator cranes before fuel movement begins. The load assumed by the cranes for this test must be equal to or greater than the maximum load to be assumed by the cranes during the refueling operation. A thorough

visual inspection of the cranes shall be made after the dead-load test and prior to fuel handling.

12. A licensed senior reactor operator will be on site and designated in charge of the refueling operation.

b. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease. Work shall be initiated to correct the violated conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be performed.

Basis

The equipment and general procedures to be utilized during refueling are discussed in the FSAR. Detailed instructions, the above specified precautions, and the design of the fuel handling equipment incorporating built-in interlocks and safety features, provide assurance that no incident occurs during the refueling operations that would result in a hazard to public health and safety. (1) Whenever changes are not being made in core geometry, one flux monitor is sufficient. This permits maintenance of the instrumentation. Continuous monitoring of radiation levels (2 above) and neutron flux provides immediate indication of an unsafe condition. The residual heat removal pump is used to maintain a uniform boron concentration.

The shutdown margin indicated in Part 5 will keep the core subcritical, even if all control rods were withdrawn from the core. During refueling, the reactor refueling cavity is filled with approximately 275,000 gallons of borated water. The boron concentration of this water is sufficient to maintain the reactor subcritical by approximately 10% $\Delta k/k$ in the cold condition with all rods inserted, and will also maintain the core subcritical even if no control rods were inserted into the reactor. (2) Periodic checks of refueling water boron concentration insure that proper shutdown margin is maintained. Part 6 allows the control room operator to inform the manipulator operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

Interlocks are utilized during refueling to ensure safe handling. Only one assembly at a time can be handled. The fuel handling hoist is dead weight tested prior to use to assure proper crane operation. It will not be possible to lift or carry heavy objects over the spent fuel pool when fuel is stored therein through interlocks and administrative procedures.

The one hundred hour decay time following plant shutdown is consistent with the assumption used in the dose calculation for the fuel handling accident. The requirement for the Auxiliary Building Special Ventilation System to be operable and spent fuel pool sweep system, including charcoal adsorbers, to be operable when spent fuel movement is being made provides added assurance that the offsite doses will be within acceptable limits in the event of a fuel handling accident. The spent fuel pool sweep system is designed **to sweep the atmosphere above the refueling pool and release to the Auxiliary Building vent during fuel handling operations. Normally, the charcoal adsorbers are bypassed but** for purification operation, the bypass dampers are closed routing the air flow through the charcoal absorbers. The bypass dampers also close on a high radiation signal. If the dampers do not close tightly, bypass leakage could exist to negate the usefulness of the charcoal adsorber. If the spent fuel pool sweep system is found not to be operable, fuel handling within the Auxiliary Building will be terminated until the system can be restored to the operable condition.

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 radioiodine releases to the atmosphere. Bypass leakage for the charcoal adsorbers and particulate removal efficiency for HEPA filters are determined by halogenated hydrocarbon and DOP respectively. The laboratory carbon sample test results indicate a radioactive methyl iodide removal efficiency for expected accident conditions. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers. If the performances are as specified, the calculated doses would be less than the guidelines stated in 10 CFR Part 100 for the accidents analyzed.

The presence of a licensed senior reactor operator at the site and designated in charge provides qualified supervision of the refueling operation during changes in core geometry.(3)

References:
(1) FSAR Section 9.5.2
(2) FSAR Table 3.2-1
(3) FSAR Section 13.2.1

to this value.

c. Residual Heat Removal System

1. Those portions of the Residual Heat Removal System external to the isolation valves at the containment shall be hydrostatically tested at 350 psig at each major refueling outage, or they shall be tested during their use in normal operation at least once between successive major refueling outages.

2. The total leakage from either train shall not exceed two gallons per hour. Visible leakage that cannot be stopped at test conditions shall be suitably measured to demonstrate compliance with this Specification.

3. Any repairs necessary to meet the specified leak rate shall be accomplished within seven days of resumption of power operation.

d. Shield Building Ventilation System

1. At least once per operating cycle, or once every 18 months, whichever occurs first, the following conditions shall be demonstrated:

   A. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 10 inches of water and the pressure drop across any HEPA filter bank is less than 4 inches of water at the system design flow rate (±10%).

   B. Automatic initiation of each train of the system.

   C. Operability of heaters at rating and the absence of defects by visual inspection.

2. A. The tests and analysis of Specification 3.6.b.3 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first, or after every 720 hours of system operation or following painting, fire, or chemical release (during system operation) in any ventilation zone serviced by the ventilation system. Tests and analysis of Specification 3.6.b.3 shall also be performed

following painting, fire or chemical release if a visual inspection indicates the presence of contaminants.

B. 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.

C. 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.

D. Each train shall be operated with the heaters on at least 10 hours every month.

3. Each train shall be determined to be operable at the time of its periodic test if it produces measurable indicated vacuum in the annulus within two minutes after initiation of a simulated safety injection signal and obtains equilibrium discharge conditions that demonstrate the Shield Building leakage is within acceptable limits.

e. Auxiliary Building Special Ventilation System

1. Periodic tests of the Auxiliary Building Special Ventilation System, including the door interlocks, shall be performed in accordance with Specifications 4.4.d.1 through 4.4.d.2.C.

2. Each train of Auxiliary Building Special Ventilation System shall be operated with the heaters on at least 10 minutes every month.

3. Each system shall be determined to be operable at the time of periodic test if it starts with coincident isolation of the normal ventilation ducts and produces a measurable vacuum throughout the Special Ventilation Zone with respect to the outside atmosphere.

f. Containment Vacuum Breaker System

The power operated valve in each vent line shall be tested during each refueling outage to demonstrate that a simulated containment vacuum of 0.5

psi will open the valve and a simulated accident signal will close the valve. The check and butterfly valves will be leak tested in accordance with specification 4.4.b during each refueling.

Basis

The Containment System consists of a steel Reactor Containment Vessel within a concrete Shield Building and a Shield Building Ventilation System which, in the event of a loss-of-coolant accident, will produce a vacuum in the Shield Building annulus and will cause all leakage from the Reactor Containment Vessel to be mixed in the annulus volume and recirculated through a filter system before its deferred release to the environment through the exhaust fan that maintains vacuum in the annulus. Potential leakage from the RHRS or from the majority of lines that span the Shield Building annulus is collected in a special ventilation zone of the Auxiliary Building and filtered before its release.

The free-standing Reactor Containment Vessel is designed to accomodate the maximum internal pressure that would result from the Design Basis Accident.(1) For initial conditions typical of normal operation, 120°F and 15 psia, an instantaneous **double-ended** break with minimum safety features results in a peak pressure of 42.2 psig at 268°F.

The containment has been successfully strength-tested at 51.8 psig and leak tested at 46.0 psig to meet acceptance specifications prior to installation of penetrations.

The safety analysis (2) is based on a conservatively chosen reference set of assumptions regarding the sequence of events relating to activity release and attainment of vacuum in the Shield Building annulus, the effectiveness of filtering, and the leak rate of the Reactor Containment Vessel as a function of time. The effects of variation in these assumptions, including that for a leak rate, have been investigated thoroughly. A summary of the items of conservatism involved in the reference calculation and the magnitude of their effect upon off-site dose demonstrates the collective effect of conservatism in these assumptions. (Refer to Appendix H, FSAR)

The reference initial leak rate in this analysis is 0.5 weight percent of air per 24 hours at the peak pressure of the Design Basis Accident. The resulting two-hour doses at the nearest site boundary are significantly less than the guidelines presented in 10 CFR 100.

The pre-operational integrated leak rate tests are specified at both full design pressure and at reduced pressure, with later periodic tests performed only at reduced pressure, as suggested in the relevant AEC guide (3), and at the frequency indicated in the guide for the design and leak rate test pressures. The operational limit on leak rate $L_{tm} = 0.75\ L_t$, provides a 25 percent allowance for possible leakage deterioration between integrated leak rate tests. The six-month allowance on test schedule provides flexibility necessary to permit tests to be performed at times of scheduled or unscheduled plant outage.

The frequent leak-testing of isolation valves and other penetrations, (areas which may reasonably be expected to be responsible for any excess leakage, rather than the containment shell itself) will provide reassurance, approximately annually, that the allowable leak rate limit is met. These tests will also indicate specific areas of deterioration that may warrant repair before their leakage is excessive.

The Residual Heat Removal System functionally becomes a part of the containment volume during the post-accident period when its operation is changed over from the injection phase to the recirculation phase. Redundancy and independence during this period, and the possible consequences of leakage are relatively minor relative to those of the Design Basis Accident (1); however, the partial role of the RHR System in containment warrants surveillance of its leak-tightness.

The Shield Building Ventilation System consists of two independent systems that have only a discharge point in common, the Containment System Vent. Both systems are normally activated and one alone must be capable of accomplishing the design function of the system. The periodic tests will demonstrate the capability of both the separate and combined systems.

Reliable simulation of the transient effects of accident-related heat flow from the Reactor Containment Vessel to the annulus appears to be difficult as well as inconvenient, and the necessary differences between any test conditions and predicted accident conditions would still require supporting analysis. Only the heat input to the annulus could be test-simulated, and not the heat transfer which determines the heat input. However, analysis supported by the results of actual tests without heat addition will provide reliable means of determining system performance with heat addition. The major uncertainties in system performance relate to such "as-built" considerations as Shield Building in-leakage, actual system losses, and overall transient response. These areas can be directly refined in the analysis model from the results of the tests specified. The effects of heat addition are readily incorporated, in a conservative manner where necessary, by considering extreme variations of heat transfer coefficients and transient containment temperature conditions. Such analysis performed during final design has demonstrated, for example, that a slight increase in the capacity of the fans was sufficient to accomodate more severe assumptions regarding heat transfer through the shell. It is expected that nearly any deviation in system behavior discovered during initial testing can be similarly offset by increases in the capacity of these fans, which have minimal power requirements (12 hp and 1 hp for the recirculation and discharge fans, respectively).

Several penetrations of the Reactor Containment Vessel and the Shield Building could, in the event of leakage past their isolation valves, result in leakage being conveyed across the annulus by the penetrations themselves thus bypassing the function of the Shield Building Ventilation System. (4) Such leakage is estimated not to exceed eleven percent at most of the Containment Vessel leakage; however, an entire area of the Auxiliary Building has medium leakage construction and controlled access, and is designated as the Special Ventilation Zone where such leakage would be collected by either of two redundant trains of the Auxiliary Building Special Ventilation System. This system, when activated, will replace the normal ventilation and draw a vacuum throughout the zone such that all out-leakage will be through particulate and charcoal filters which exhaust to the Auxiliary Building Vent.

The testing requirements for the filter units of the Shield Building Ventilation System and the Auxiliary Building Special Ventilation System will ensure removal of radioactivity consistent with the assumptions made in the analysis of the Design Basis Accident. (2)

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 10 inches of water and an individual HEPA bank pressure drop of 4 inches of water at the system design flow rate (±10%) will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. A test frequency of once per operating cycle establishes 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. Replacement adsorbent should be qualified according to the guidelines of Regulatory Guide 1.52 dated June 1973. 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. The use of multi-sample assemblies for test samples is an acceptable alternate to mixing one bed for a sample. If the iodine removal efficiency test results are unacceptable, all adsorbent in the system should be replaced. Any HEPA filters found defective should be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52 dated June 1973.

Operation of the system every month will demonstrate operability of the filters and adsorber system. Operation of the Shield Building Ventilation System will result in a discharge to the environment which is characterized by at least 3 samples of the building atmosphere.

If 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 should be performed as required for operational use.

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

References:
(1) FSAR Section 5
(2) FSAR Section 14.3.3
(3) Proposed 10 CFR Part 50, Appendix J (Revised)
(4) FSAR Section 5.5

4.12 SPENT FUEL POOL SWEEP SYSTEM

Applicability

Applies to testing and surveillance requirements for the spent fuel pool sweep system in Specifications 3.8.a.9.

Objective

To verify the performance capability of the spent fuel pool sweep system.

Specification

a. At least once per operating cycle or once every 18 months, whichever occurs first, the following conditions shall be demonstrated:

   1. Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 10 inches of water and the pressure drop across any HEPA bank is less than 4 inches of water at the system design flow rate (±10%).

   2. Automatic initiation of each train.

b. 1. The tests and analysis of Specification 3.6.b.3 shall be performed at least once per operating cycle or once every 18 months, whichever occurs first, or after every 720 hours of system operation or following painting, fire, or chemical release (during system operation) in any ventilation zone serviced by the ventilation system. Tests and analysis of Specification 3.6.b.3 shall also be performed following painting, fire or chemical release if a visual inspection indicates the presence of contaminants.

   2. 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.

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 10 inches of water and 4 inches across any HEPA filter bank at the system design flow rate (±10%) will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. A test frequency of once per operating cycle establishes 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. Replacement adsorbent should be qualified according to the guidelines of Regulatory Guide 1.52 dated June 1973. 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. The use of multi-sample assemblies for test samples is an acceptable alternate to mixing one bed for a sample. If the iodine removal efficiency test results are unacceptable, all adsorbent in the system should be replaced. Any HEPA filters found defective should be replaced with filters qualified pursuant to Regulatory Position C.3.d of Regulatory Guide 1.52 dated June 1973.

If 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 should be performed as required for operational use.

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

TABLE 4.1-3

MINI[illegible] FREQUENCIES FOR EQUIPMENT TES[illegible]

	Equipment Tests***	Test	Frequency	Maximum Time Between Tests (Days)
1.	Control Rods	Rod drop times of all full length rods	Each refueling outage	N.A.
		Partial movement of all rods	Every 2 weeks	17
1a.	Reactor Trip Breakers	Open trip	Monthly	37
1b.	Reactor Coolant Pump Breakers-Open-Reactor Trip	Operability	Each refueling outage	N.A.
2.	Pressurizer Safety Valves	Set point	One each refueling outage	N.A.
3.	Main Steam Safety Valves	Set point	Two each refueling outage	N.A.
4.	Containment Isolation Trip	Operability	Each refueling outage	N.A.
5.	Refueling System Interlocks	Operability	Prior to each refueling outage	N.A.
6.	Ventilation System a. Shield Building b. Auxiliary Building SV Zone c. Spent Fuel Pool	Halide, DOP and Methyl Iodide Pressure Drop Test Visual Inspection	During each refueling outage except as specified in Note**	N.A.
7.	Fire Protection Pump and Power Supply	*Operability	Monthly	37
8.	Containment Leak Detect	Operability	Weekly	8
9.	Diesel Fuel Supply	*Fuel inventory	Weekly	8
10.	Turbine Stop and Governor Valves	Operability	Monthly (1)	37(1)
11.	Fuel Assemblies	Visual Inspection	Each refueling outage	N.A.
12.	Guard Pipes	Visual Inspection	Each refueling outage	N.A.

Notes

* See Specification 4.1.d

** Tests and frequency shall be in accordance with Specifications 4.4.d and 4.12.

*** Following maintenance on the above equipment that could affect the operation of the equipment tests should be performed to verify operability.

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(1) Temporary extension granted from February 1, 1975 to April 1, 1975 (59 days).