PLANT SYSTEMS

INSERT "A"

3/4.7.7 CONTROL ROOM HVAC SYSTEM

CONTROL ROOM EMERGENCY FILTRATION/PRESSURIZATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7.1 Two Control Room Emergency Filtration/Pressurization System trains shall be OPERABLE. DRAFT

APPLICABILITY: MODES 1, 2, 3, 4, 5, 6, and during movement of irradiated fuel assemblies.

ACTION:

MODES 1, 2, 3, and 4:

With one Control Room Emergency Filtration/Pressurization System train inoperable, restore the inoperable train 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, 6 and during movement of irradiated fuel assemblies:

a. With one Control Room Emergency Filtration/Pressurization System train inoperable, immediately restore the inoperable train to OPERABLE status within 7 days or place the OPERABLE Control Room Emergency Filtration/Pressurization System train in the emergency recirculation mode or suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

b. With two Control Room Emergency Filtration/Pressurization System trains inoperable, immediately suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.7.1 Each Control Room Emergency Filtration/Pressurization System train shall be demonstrated OPERABLE:

a. At least once per 31 days by operating each Control Room Emergency Filtration/Pressurization System train for ≥ 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:

PLANT SYSTEMS

INSERT "A"

3/4.7.7 CONTROL ROOM HVAC SYSTEM

CONTROL ROOM EMERGENCY FILTRATION/PRESSURIZATION SYSTEM (Continued)

LIMITING CONDITION FOR OPERATION

DRAFT

1) Verifying that the filtration unit satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% by using the test procedure guidance in Regulatory Position C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978*, and the emergency filtration unit flow rate is 8000 cfm ± 10%, and the emergency pressurization unit flow rate is 800 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 Regulatory Guide 1.52, Revision 2, March 1978*, for a methyl iodide penetration of less than 0.2%; and

3) Verifying an emergency filtration unit flow rate of 8000 cfm ± 10% and an emergency pressurization unit flow rate of 800 cfm ± 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 0.2%;

*ANSI N510-1980 and ANSI N509-1980 shall be used in place of ANSI N510-1975 and ANSI N509-1976, respectively.

INSERT "A"

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

DRAFT

d. At least once per 18 months by:

1) Verifying that the total pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 8.0 inches water gauge while operating the emergency filtration unit at a flow rate of 8000 cfm ± 10%, and is less than 9.5 inches water gauge while operating the emergency pressurization unit at a flow rate of 800 cfm ± 10%; and

2) Verifying that the heaters in the emergency pressurization units dissipate 10 ± 1 kW when tested in accordance with ANSI N510-1980;

e. After each complete or partial replacement of a HEPA filter bank in the emergency filtration unit(s), by verifying that the unit 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 unit at a flow rate of 8000 cfm ± 10%;

f. After each complete or partial replacement of a charcoal adsorber bank in the emergency filtration unit(s), by verifying that the unit 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 unit at a flow rate of 8000 cfm ± 10%;

g. After each complete or partial replacement of a HEPA filter bank in the emergency pressurization unit(s), by verifying that the unit 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 unit at a flow rate of 800 cfm ± 10%;

h. After each complete or partial replacement of a charcoal adsorber bank in the emergency pressurization unit(s), by verifying that the unit 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 unit at a flow rate of 800 cfm ± 10%;

PLANT SYSTEMS

INSERT "A"

SURVEILLANCE REQUIREMENTS (Continued)

i. At least once per 18 months by verifying that each Control Room Emergency Filtration/Pressurization System train actuates on an actual or simulated Safety Injection, Loss-of-Offsite Power, or Intake Vent-High Radiation Signal; and

j. At least once per 18 months by verifying that each Control Room Emergency Filtration/Pressurization System train can maintain a positive pressure of $\geq$ 0.125 inches water gauge, relative to the adjacent areas during the pressurization mode of operation at a makeup flow rate of $\leq$ 800 cfm.

DRAFT

PLANT SYSTEMS

CONTROL ROOM HVAC SYSTEM

INSERT "A"

CONTROL ROOM AIR CONDITIONING SYSTEM (CRACS)

LIMITING CONDITION FOR OPERATION

3.7.7.2 Two CRACS trains shall be OPERABLE:

DRAFT

APPLICABILITY: MODES 1, 2, 3, 4, 5, 6, and during movement of irradiated fuel assemblies.

ACTION:

MODES 1, 2, 3 and 4:

and at least 100% of the required heat removal capability equivalent to a single OPERABLE CRACS train available

a. With one CRACS train inoperable, restore the inoperable train to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two CRACS trains inoperable, ~~but each capable of supplying 50% of their nominal capacity~~, restore the inoperable trains to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5, 6 and during movement of irradiated fuel assemblies:

a. With one CRACS train inoperable, restore the inoperable train to OPERABLE status within 30 days or, immediately place the OPERABLE CRACS train in operation or suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

b. With two CRACS trains inoperable, ~~but each capable of supplying 50% of their nominal capacity~~, restore the inoperable trains to OPERABLE status within 30 days or immediately suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.

c. With two CRACS trains inoperable and with b. above not applicable, immediately suspend CORE ALTERATIONS and movement of irradiated fuel assmblies

SURVEILLANCE REQUIREMENTS

4.7.7.2 At least once per 18 months verify each CRACS train has the capability to remove the assumed heat load.

PLANT SYSTEMS

BASES

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either: (1) provide normal cooldown of the facility or (2) mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level is based on providing a 30-day cooling water supply to safety-related equipment without exceeding its design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," Rev. 2 (January 1976). The limitation on maximum temperature is based on the maximum allowable component temperatures in the Service Water and Component Cooling Water Systems, and the requirements for cooldown. The limitation on average sediment depth is based on the possible excessive sediment buildup in the service water intake channel.

3/4.7.6 FLOOD PROTECTION

The limitation of flood protection ensures that facility protective actions will be taken in the event of flood conditions. The only credible flood condition that endangers safety related equipment is from water entry into the turbine building via the circulating water system from Squaw Creek Reservoir and then only if the level is above 778 feet Mean Sea Level. This corresponds to the elevation at which water could enter the electrical and control building endangering the safety chilled water system. The surveillance requirements are designed to implement level monitoring of Squaw Creek Reservoir should it reach an abnormally high level above 776 feet. The Limiting Condition for Operation is designed to implement flood protection, by ensuring no open flow path via the Circulating Water System exists, prior to reaching the postulated flood level.

(SEE INSERT "B")

3/4.7.7 CONTROL ROOM HVAC SYSTEM

The OPERABILITY of the Control Room HVAC System ensures that: (1) the control room ambient air temperature does not exceed the allowable temperature per 3/4.7.[illegible] for continuous-duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable including temperature for operations personnel during and following all credible accident conditions. Operation of the system with the heaters operating to maintain low humidity using automatic control 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 OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rems or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of 10 CFR 50 Appendix A. ANSI N510-1980 and ANSI N509-1980 will be used as a procedural guide for surveillance testing.

(MOVE TO SEE INSERT "C")

INSERT B

DRAFT

The control room emergency filtration/pressurization system consists of two independent, redundant trains that recirculate and filter the control room air, and two independent, redundant trains that pressurize the control room.

INSERT C

DRAFT

A Control Room Air Conditioning System (CRACS) consists of two independent and redundant trains that provide cooling and heating of recirculated control room air. Each Control Room Air Conditioning (CRAC) train includes two heating and cooling units, instrumentation, and controls to provide for control room temperature control. Each cooling unit provides 50 % of the heat removal capability for its respective train.

A CRAC train is inoperable if it is not capable of removing the required heat load for plant conditions. The required heat load includes normal and post-accident conditions. The actual heat load and the heat removal capability needed to adequately cool the control room is dependent upon factors such as outdoor air temperature and safe shutdown impoundment water temperature. OPERABILITY determinations are based upon design basis conditions unless a specific evaluation has been performed which identifies the required heat load for actual conditions. Individual components are inoperable if they are not capable of performing their safety functions.

Due to the redundancy of trains, the diversity of components, and the annual variations in outdoor conditions, the inoperability of one component in a train or two components in different trains does not necessarily result in a loss of safety function for the CRACS. The intent of this condition is to maintain a combination of equipment such that 100% of the required heat removal capability of a single OPERABLE CRAC train remains available.

With one or more CRAC trains inoperable and at least 100% of the required heat removal capability equivalent to a single OPERABLE CRAC train available, the inoperable trains must be returned to OPERABLE status within 30 days. This Allowed Outage Time is based on the low probability of complete loss of cooling due to the redundancy of the support systems (electrical and cooling water), the capability of the OPERABLE train/components to provide the required cooling, the potential that plant staff actions can restore or mitigate the effects of component failures, and the time available to respond as loss of cooling does not have an immediate, irreversible impact.

While in MODES 5, 6 or during movement of irradiated fuel assemblies, if both trains cannot be restored to OPERABLE status within 30 days, an OPERABLE train (A or B) must be placed in operation immediately; otherwise, immediately suspend CORE ALTERATIONS and movement of irradiated fuel assemblies.