W3F1-95-0034
ATTACHMENT B

PLANT SYSTEMS

3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Both control room emergency air filtration trains (S-8) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With one control room emergency air filtration train inoperable, either 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.

b. With both control room emergency air filtration trains inoperable, restore one train to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each control room emergency air filtration train (S-8) shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters on.

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 the filtration train satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 4225 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 of Regulatory Guide 1.52, Revision 2, March 1978.

3. Verifying a system flow rate of 4225 cfm ±10% during train operation when tested in accordance with ANSI N510-1975.

SURVEILLANCE REQUIREMENTS (Continued)

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.

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 7.8 inches water gauge while operating the train at a flow rate of 4225 cfm ±10%.

2. Verifying that on a safety injection actuation test signal or a high radiation test signal, the train automatically switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

3. Verifying that heaters dissipate 10 (+0.5, -1.0) kW when tested in accordance with ANSI N510-1975.

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 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the train at a flow rate of 4225 cfm ±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 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the train at a flow rate of 4225 cfm ±10%.

3/4.7.6.2 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.2 One control room emergency air filtration train (S-8) shall be OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With both control room emergency air filtration trains inoperable, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.7.6.2 The control room emergency air filtration trains (S-8) shall be demonstrated OPERABLE per the applicable Surveillance Requirements of 4.7.6.1.

3/4.7.6.3 CONTROL ROOM AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.7.6.3 Two independent control room air conditioning units shall be OPERABLE.

APPLICABILITY: ~~All MODES~~ MODES 1, 2, 3 and 4.

ACTION:

a. With one control room air conditioning unit inoperable, maintain control room temperature less then or equal to 80°F, and restore the inoperable unit to OPERABLE status within 7 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two control room air conditioning units inoperable ~~due to a loss of cooling capability,~~ and control room temperature greater then or equal to 80°F, return one unit to an OPERABLE status within ~~3~~ 1 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~c. In MODES 5 or 6 with both control room air conditioning units inoperable, suspend and all operations involving CORE ALTERATIONS or positive reactivity changes.~~

~~d. With two control room air conditioning units inoperable due to a loss of air circulation capability, take the appropriate ACTION in Specification 3.7.6.1 or 3.7.6.2.~~

SURVEILLANCE REQUIREMENTS

4.7.6.3 Each control room air conditioning unit shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the operating control room air conditioning unit is maintaining average control room air temperature less than or equal to 80°F.

b. At least quarterly, if not performed within the last quarter, by verifying that each control room air conditioning unit starts and operates for at least 15 minutes.

3/4.7.6.4 CONTROL ROOM AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.7.6.4 One control room air conditioning unit shall be OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With both control room air conditioning units inoperable, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.7.6.4 The control room air conditioning units shall be demonstrated OPERABLE per the Surveillance Requirements of 4.7.6.3.

PLANT SYSTEMS

3/4.7.6.5 CONTROL ROOM ISOLATION AND PRESSURIZATION

LIMITING CONDITION FOR OPERATION

3.7.6.5 The control room envelope isolation and pressurization boundaries shall be OPERABLE.*

APPLICABILITY: All MODES.

ACTION:

a. With either control room envelope isolation valve in a normal outside air flow path inoperable, maintain at least one isolation valve in the flowpath OPERABLE, and either restore the inoperable valve to OPERABLE status with 7 days or isolate the affected flow path within the following 6 hours.

b. With any Control Room Emergency Filter Outside Air Intake valve(s) inoperable, maintain at least one of the series isolation valves in a flowpath OPERABLE, and either restore the inoperable valve(s) to OPERABLE status within 7 days or isolate the affected flow path within the following 6 hours.

c. With more than one Control Room Emergency Filter Outside Air Intake flow path inoperable, maintain at least one flow path per intake operable and restore an additional flow path to operable status within 7 days or, be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

d ~~c~~. With the control room envelope inoperable as a result of causes other than those addressed by ACTION (a), (b), or (c) above:

1. Within 1 hour and at least once per 12 hours thereafter while the control room envelope is inoperable, verify that the Emergency Breathing Airbanks pressure is greater than or equal to 1800 psig.

* Breaches in the pressurization boundary may be allowed for a period not to exceed 7 days on an intermittent basis under administrative control provided that they are of known origin and either:

1. Breaches with permanent sealing mechanisms (e.g.: doors or dampers),
OR
2. breaches less than or equal to 1 square foot.

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

2. MODES 1-4:

a. ~~Within 48 hours,~~ I~~i~~dentify the cause of the failure within 48 hours and initiate corrective action to restore the control room envelope to OPERABLE status. If ~~identified~~ the cause of the failure is within LCO limits, operation may continue for up to 7 days after the control room envelope is declared inoperable. Otherwise, be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

b. Should a toxic gas event occur, take immediate steps to restore control room envelope integrity and commence a plant shutdown to be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

3. MODES 5 and 6:

a. Suspend all operations involving CORE ALTERATIONS or positive reactivity changes and if a toxic gas event occurs, take immediate steps to restore control room envelope integrity.

SURVEILLANCE REQUIREMENTS

4.7.6.5 The control room envelope isolation and pressurization boundaries shall be demonstrated OPERABLE at least once per 18 months by:

a. Verifying that the control room envelope can be maintained at a positive pressure of greater than or equal to 1/8 inch water gauge relative to the outside atmosphere with a make-up air flowrate less than or equal to 200 cfm during system operation.

b. Verifying that on a toxic gas detection test signal, the system automatically switches to the isolation mode of operation.

c. Verifying that on a safety injection actuation test signal or a high radiation test signal, normal outside air flow paths isolate.

3/4.7.6.1 and 3/4.7.6.2 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM

During an emergency, both S-8 units are started to provide filtration and adsorption of outside air and control room envelope recirculated air (reference: FSAR 6.4.3.3). Dosages received after a full power design basis LOCA were calculated to be orders of magnitude higher than other accidents involving radiation releases to the environment (reference: FSAR Tables 15.6-18, 15.7-2, 15.7-4, 15.7-5, 15.7-7). Because the consequences of a full power design basis LOCA are more severe than those occurring during COLD SHUTDOWN and REFUELING, a separate specification, 3/4.7.6.2, requires only one OPERABLE S-8 unit to guard against accidents during Modes 5 and 6.

The OPERABILITY of this system and control room design provisions are based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

Operation of the system with the heaters on for at least ten hours continuous over a thirty-one day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. Obtaining and analyzing charcoal samples after 720 hours of adsorber operation (since the last sample and analysis) ensures that the adsorber maintains the efficiency assumed in the safety analysis and is consistent with Regulatory Guide 1.52.

3/4.7.6.3 CONTROL ROOM AIR TEMPERATURE

Maintaining the control room air temperature less than or equal to 80°F ensures that (1) the ambient air temperature does not exceed the allowable air temperature for continuous duty rating for the equipment and instrumentation in the control room, and (2) the control room will remain habitable for operations personnel during plant operation.

The Air Conditioning System is designed to cool the outlet air to approximately 55°F. Then, non-safety-related near-room heaters add enough heat to the air stream to keep the rooms between 70 and 75°F. Although 70 to 75°F is the normal control band, it would be too restrictive as an LCO. Control Room equipment was specified for a more general temperature range of 45 to 120°F. A provision for the CPC microcomputers, which might be more sensitive to heat, is not required here. Since maximum outside air make-up flow in the normal ventilation mode comprises less than ~~only~~ ten percent of the air flow from an AH-12 unit, outside air temperature has little affect on the AH-12s cooling coil heat load. Therefore, the ability of an AH-12 unit to maintain control room temperature in the normal mode gives adequate assurance of its capability for emergency situations. ~~The specification balances the need for reasonable control room temperatures against the effort required to repair one or both air conditioning trains.~~

3/4.7.6.4 CONTROL ROOM ISOLATION AND PRESSURIZATION

This specification provides the operability requirements for the control room envelope isolation and pressurization boundaries. The Limiting Condition for Operation (LCO) specifies specific ACTION STATEMENTS for inoperable components of the control room ventilation systems, separate from the S-8 and AH-12 units. The operability of the remaining parts of the system ~~can only~~ affect the ability of the control room envelope to pressurize. A routine maintenance provision is included in the LCO in the form of a footnote. This provision allows for small penetrations in the control room envelope or blockage of envelope doors or dampers for a period not to exceed 7 days on an intermittent basis provided that appropriate administrative controls are implemented.

~~The~~ ACTION STATEMENTS a and b focus on maintaining isolation characteristics. The valves in the flow path referred to in ACTION a are HVC-102 & HVC-101. The Outside Air Intake (OAI) "series isolation valves" of ACTION b and c are as follows:

NORTH OAI - HVC-202B & HVC-201A
HVC-202A & HVC-201B

SOUTH OAI - HVC-204B & HVC-203A
HVC-204A & HVC-203B

ACTION STATEMENT c preserves the operator action (i.e., manually initiated filtered pressurization) that maintains the control room envelope at a positive pressure during a radiological emergency. As indicated above each OAI series isolation valve is powered by the opposite train. With more than one OAI flow path inoperable a single failure (i.e., train A or B) could prohibit the ability to maintain the control envelope at a positive pressure. Therefore, in the specified condition, ACTION c requires an additional flow path to be returned to service within 7 days.

ACTION d is intended to restore ~~ing that~~ pressurization ability as soon as possible for unintended breaches in the envelope. The 48 hours to locate an unidentified breach is based on an evaluation that considered troubleshooting tasks that would be performed as necessary should the integrity of the Control Room Envelope pressure boundary fall into question. Estimated times associated with each task were based on sound engineering judgment ~~while providing the ability to safely perform routine maintenance evolutions~~. The ACTION statements also recognize the MODE-independent nature of the toxic chemical threat and provides for operator protection in the event of a toxic chemical release concurrent with a breach in the control room envelope. In addition, provisions have been added to the specification that, in the event of a toxic chemical event that threatens control room habitability while in the ACTION statement, ~~operator action~~ "immediate steps" will be initiated to place the plant in a safe condition. In this context, the phrase "immediate steps" is taken to mean that the operators should immediately take reasonable action to restore a known breach in the envelope to an air-tight condition. Amplifying instructions are provided in Waterford 3 Administrative procedures, which impose special controls for work that will breach the control room envelope.