

## PLANT SYSTEMS

### 3/4.7.7 AUXILIARY BUILDING FILTERED EXHAUST SYSTEM

#### LIMITING CONDITION FOR OPERATION

3.7.7 Two independent trains of the Auxiliary Building Filtered Exhaust System shall be OPERABLE.

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

#### ACTION:

With one train of the Auxiliary Building Filtered Exhaust System 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.

#### SURVEILLANCE REQUIREMENTS

4.7.7 Each train of the Auxiliary Building Filtered Exhaust System shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and activated carbon adsorbers and verifying that the system operates for at least 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 activated carbon adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the same by:

- 1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) and uses the test procedure guidance in 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 30,000 cfm  $\pm$  10%;
- 2) Verifying, within 31 days after removal, that a laboratory analysis of a representative activated 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 ~~1%~~ and *0.71%* *ASTM D3803-86, Test Method "A"*

\*The requirement for reducing refrigerant concentration to 0.01 ppm may be satisfied by operating the system for 10 hours with heaters on and operating.

CATAWBA - UNITS 1 & 2

3/4 7-17

Amendment No. 37 (Unit 1)

Amendment No. 29 (Unit 2)

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SURVEILLANCE REQUIREMENTS (Continued)

- 3) Verifying a system flow rate of 30,000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of activated carbon adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative activated 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 ~~1%~~ <sup>1</sup>;
- d. At least once per 18 months by: <sup>ASTM D3803-86, Test Method "A"</sup>
- 1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and moisture separators of less than 8 inches Water Gauge while operating the system at a flow rate of 30,000 cfm  $\pm$  10%,
  - 2) Verifying that the system starts on a Safety Injection test signal, and directs its exhaust flow through the HEPA filters and activated carbon adsorbers,\*\*
  - 3) Verifying that the system maintains the ECCS pump room at a negative pressure relative to adjacent areas,
  - 4) Verifying that the filter cooling bypass valves can be manually opened, and
  - 5) Verifying that the heaters dissipate 40  $\pm$  4 kW.
- e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 30,000 cfm  $\pm$  10%; and
- f. After each complete or partial replacement of an activated carbon adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 30,000 cfm  $\pm$  10%.

\*\*This surveillance need not be performed until prior to entering HOT SHUTDOWN following the Unit 1 first refueling.

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### BASES

#### 3/4.7.7 AUXILIARY BUILDING FILTERED EXHAUST SYSTEM

The OPERABILITY of the Auxiliary Building Filtered Exhaust System ensures that radioactive materials leaking from the ECCS equipment within the auxiliary building following a LOCA are filtered prior to reaching the environment. 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 operation of this system and the resultant effect on offsite dosage calculations was not taken credit for in the safety analyses. However, the operation of this system and the resultant effect on the NRC staff's offsite dose calculations was assumed in the staff's SER, NUREG-0954. ANSI NS10-1980 will be used as a procedural guide for surveillance testing. A STM D3803-86 Test Method

\*A\* will be used for surveillance testing of methyl iodide penetration. This method uses a relative humidity of 95% to verify a methyl iodide penetration. This increased humidity factor permits allowances for degraded bus voltages allowed by Technical Specifications, at the 4150 buses and its effect on the filter heater supply.

#### 3/4.7.8 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Catawba Safety Review Group. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletions of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

ATTACHMENT II

## Technical Specification Change Request

### Proposed Technical Specification Change

This Technical Specification (TS) change request will change TS Surveillance 4.7.7.b.2 and 4.7.7.c. read "...meets the laboratory testing criteria of ASTM D3803-86, Test Method "A" for a methyl iodide penetration of less than 0.71%." The TS Bases for TS 4.7.7. are modified to reflect this test criteria. Revising the carbon adsorber test method will ensure that the Auxiliary Building Filtered Exhaust System filters have a decontamination efficiency of greater than or equal to 95% under all anticipated operating conditions.

### Discussion

During the HVAC Review currently in progress at Catawba Nuclear Station it was discovered that the Safety-Related Auxiliary Building Pump Room Heater Demisters were not conservatively sized for all anticipated operating modes. During low voltage conditions sufficient power is not supplied to the Auxiliary Building Pump Room Heater Demisters for them to maintain the relative humidity of the air exhausted from the ECCS Pump Rooms to 70% or less.

The Electrical Distribution System at Catawba can be powered from either offsite power or the Safety-Related Diesel Generators. Station Technical Specifications allow the Diesel Generators to operate at 4160 VAC  $\pm$  420 VAC and offsite power to drop under degraded bus conditions to approximately 3685 VAC. The minimum calculated voltage supplied to the Auxiliary Building Ventilation Heater Demisters was conservatively calculated to be 541.18 VAC.

The design basis of the Auxiliary Building Pump Room Heater Demisters is to ensure that the relative humidity of the air entering the Auxiliary Building Filtered Exhaust System carbon adsorber from the ECCS Pump Rooms beds is less than 70% relative humidity. Under low voltage conditions, with a nominal Pump Room flow rate of 7500 cfm the relative humidity of the air entering the carbon adsorber beds was calculated to be approximately 77%. In order to satisfy the design basis maximum relative humidity of 70% the allowed maximum Auxiliary Building Filtered Exhaust System ECCS Pump Room flows have been limited to less than 5500 cfm.

With a restricted upper limit of 5500 cfm an unnecessarily restrictive operating margin is placed on the system.

### Technical Justification

The proposed amendment to TS will change the carbon adsorber test method to ensure that the Auxiliary Building Filtered Exhaust System filters have a decontamination efficiency of greater than or equal to 95% under all anticipated operating conditions. The maximum expected relative humidity under the worst case of highest flow and lowest voltage is 77%. The laboratory test of the carbon samples will be conservatively tested at 95% relative humidity, instead of the 70% which is currently required. Changing the allowable penetration for the carbon beds to .71% instead of

the current 1% requirement raises the safety factor for the Auxiliary Building Filtered Exhaust System. Using the methodology of Regulatory Guide 1.52, Revision 2, March 1978, changing the allowable methyl iodide penetration to 0.71% ensures that the Decontamination Factor that is assumed in the existing Catawba FSAR, Dose Analysis for the Auxiliary Building Filtered Exhaust System, is met. Using the laboratory test method ASTM D3803-86, Test Method "A", adds further conservatism. For the reasons described above, this change will conservatively ensure that calculated offsite and onsite doses are not adversely affected while allowing a return to the nominal flowrate of 6500 SCFM.

#### No Significant Hazards Analysis

10 CFR 50.92 states that a proposed amendment involves no significant hazards considerations if operation accordance with the proposed amendment would not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- 3) Involve a significant reduction in the margin of safety.

This proposed TS amendment will not increase the probability or consequences of an accident which has been previously evaluated. Offsite and onsite doses will remain the same because of the added conservatism in the laboratory test method and the penetration factor. This change will be in accordance with the decontamination factor which is assumed in the FSAR Chapter 12.

This proposed TS amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated. This change makes no physical changes to the plant or operating procedures, because of this no new or different accidents are created.

This proposed TS amendment does not involve a significant decrease in the margin of safety. This change makes no physical changes to the plant or operating procedures. Changing the allowable penetration of the carbon beds to 0.71% raises the safety factor of the Auxiliary Building Filtered Exhaust System. This ensures that the current FSAR Chapter 12 assumptions for the system is not affected, and that the existing decontamination factor, 95%, can be used. Because the decontamination factors are the same no revision to the On or Offsite Dose analysis is required and no credit is taken for Auxiliary Building Ventilation in the Chapter 15 Analysis, therefore the margin between the current dose analysis and 10 CFR 100 is not affected.

## ENVIRONMENTAL IMPACT STATEMENT

The proposed Technical Specification change has been reviewed against the criteria of 10 CFR 51.22 for environmental considerations. As shown above, the proposed change does not involve significant hazards considerations, nor increase individual or cumulative occupational radiation exposure. Based on this, the proposed amendment meets the criteria given in 10 CFR 51.22(c)(9) for categorical exclusion from the requirements for an Environmental Impact Statement.