Nebraska Public Power District
Nebraska's Energy Leader

50.90

NLS2001021
February 28, 2001

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Proposed License Amendment Related to Generic Letter 99-02, Laboratory Testing of Nuclear-Grade Activated Charcoal
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Reference:
1. U.S. Nuclear Regulatory Commission (USNRC) Generic Letter 99-02, Laboratory Testing of Nuclear-Grade Activated Charcoal, dated June 3, 1999.
2. Letter (NLS2001011) from John H. Swailes (NPPD) to USNRC, dated February 28, 2001, Proposed License Amendment Related to the Design Basis Accident Radiological Assessment Calculational Methodology.

In accordance with the provisions of 10 CFR 50.4 and 10 CFR 50.90, the Nebraska Public Power District (NPPD) submits this request for amendment to Operating License DPR-46 to revise the Cooper Nuclear Station (CNS) Technical Specifications (TS) in response to the Generic Letter (GL) 99-02 (Reference 1) recommendations related to the laboratory testing of nuclear-grade activated charcoal.

Attachment 1 contains the description of the proposed TS change, the basis for the change, the attendant 10 CFR 50.92 evaluation and an environmental impact evaluation (10 CFR 51.22). Attachment 2 contains a copy of the current CNS TS page affected by this change and identifies the specific changes to the CNS TS and Bases. Attachment 3 contains the final, clean versions of the affected CNS TS and Bases pages.

The proposed change has been reviewed by the necessary safety review committees (Station Operations Review Committee and Safety Review and Audit Board) and incorporates amendments to the CNS Facility Operating License through Amendment 184 issued April 12, 2000. NPPD has concluded that the proposed change does not involve a significant hazard.

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This change is, in part, based on the recently submitted design basis accident radiological assessment calculational methodology revision (Reference 2). Therefore, this change is requested to be approved concurrent with the approval of the Reference 2 request. Approval and implementation of these requests will complete NPPD's response to GL 99-02.

By copy of this letter and attachments the appropriate State of Nebraska official is being notified in accordance with 10 CFR 50.91(b)(1). Copies to the Region IV Office and the CNS Resident Inspector are also being sent in accordance with 10 CFR 50.4(b)(1).

Should you have any questions concerning this matter, please contact M. T. Boyce at (402) 825-5100.

Sincerely,

John H. Swailes
Vice President of Nuclear Energy

/erg

Attachments

cc: Regional Administrator w/attachments
USNRC - Region IV

Senior Project Manager w/attachments
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/attachments
USNRC

Nebraska Health and Human Services w/attachment
Department of Regulation and Licensure

NPG Distribution w/o attachments

Records w/attachments

STATE OF NEBRASKA)
)
NEMAHA COUNTY)

John H. Swailes, being first duly sworn, deposes and says that he is an authorized representative of the Nebraska Public Power District, a public corporation and political subdivision of the State of Nebraska; that he is duly authorized to submit this correspondence on behalf of Nebraska Public Power District; and that the statements contained herein are true to the best of his knowledge and belief.

John H. Swailes

Subscribed in my presence and sworn to before me this 28th day of February, 2001.

LuAnn Bray
NOTARY PUBLIC

GENERAL NOTARY-State of Nebraska
LUANN BRAY
My Comm. Exp. May 11, 2002

PROPOSED LICENSE AMENDMENT RELATED TO GENERIC LETTER 99-02,
LABORATORY TESTING OF NUCLEAR-GRADE ACTIVATED CHARCOAL

COOPER NUCLEAR STATION
NRC DOCKET NO. 50-298, LICENSE DPR-46

AFFECTED TECHNICAL SPECIFICATIONS

TS 5.5.7, Ventilation Filter Testing Program

1.0 INTRODUCTION

Nebraska Public Power District (NPPD) requests that the Nuclear Regulatory Commission (NRC) approve a proposed Technical Specification (TS) change to incorporate laboratory testing recommendations of Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal" (Reference 1).

This TS change is being submitted consistent with the design basis accident (DBA) radiological dose calculational methodology revisions submitted in Reference 2, since the methodology revisions provide the basis for the methyl iodide removal rate acceptance criteria contained in this proposed change. Therefore, this change is requested to be approved concurrent with the approval of the Reference 2 request. Further, NPPD requests that the NRC continue to exercise enforcement discretion, consistent with Section VII.B.6 of the Enforcement Policy as described in GL 99-02 until such time that the Cooper Nuclear Station (CNS) DBA radiological assessment methodology, submitted via Reference 2, and this TS change request are approved by the NRC and implemented at CNS. Additional historical information related to this request is provided in Reference 3 of this attachment.

2.0 DISCUSSION

As discussed in GL 99-02, the NRC considers American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," to be the most accurate and realistic protocol for laboratory testing of engineered safety feature (ESF) ventilation system charcoal samples because it offers the greatest assurance of accurately and consistently determining the capability of charcoal. This standard requires the charcoal testing to be conducted at a constant low temperature, provides for smaller tolerances in temperature, humidity, and air flow test parameters, and requires humidity pre-equilibration.

Two ESF ventilation systems at CNS are used to reduce the potential onsite and offsite consequences of a radiological accident by adsorbing radioiodine. These are the Control Room Emergency Filter (CREF) System and the Standby Gas Treatment System (SGTS). To ensure

that the charcoal filters used in these systems will perform in a manner consistent with the CNS accident analysis assumptions, the TS require periodic laboratory testing of charcoal samples taken from these systems. Current TS 5.5.7.c requires that ESF ventilation charcoal samples be tested in accordance with ASTM D3803-1979, "Standard Test Methods for Radioiodine Testing of Nuclear-Grade Gas-Phase Adsorbents."

Control Room Emergency Filter and Standby Gas Treatment Engineered Safety Feature Ventilation System Functions

The CREF System is installed to provide protection for control room personnel in the event of possible airborne radioactivity in the vicinity of the control room ventilation system intake. Upon receipt of an initiation signal, the CREF System automatically switches to the emergency bypass mode of operation. The CREF System emergency bypass mode may also be manually initiated. Once initiated, control room ventilation intake air is directed through the CREF System bypass filter system before entering the control room. The CREF System is sized for normal minimum outside air intake requirements. Additional details on the CREF System are provided in the CNS Updated Safety Analysis Report (USAR) Chapter X.10.3 and X.10.4 and CNS TS Bases B 3.7.4 and B 3.3.7.1.

When required to operate, the SGTS processes effluent from the reactor building (secondary containment) to limit discharge of radioactive material to the environs. With the reactor building isolated, the SGTS reduces the reactor building to a subatmospheric pressure to mitigate leakage. An electric heating element system is included in the SGTS upstream of the SGTS charcoal adsorber. The heater system will reduce the relative humidity of the charcoal adsorber inlet airstream from 100 percent to 70 percent when the SGTS is operating. Charcoal filters are installed in the SGTS to provide the minimum required iodine efficiencies assumed in the CNS DBA analysis. The performance of the SGTS is such that the radioactivity released to the environs is kept to a practical minimum and well within the guideline values of 10 CFR Part 100. Additional details on the SGTS are provided in the CNS USAR Chapter V.3.3 and TS Bases B 3.6.4.3.

Laboratory Testing of ESF Ventilation System Charcoal

GL 99-02 indicates there have been noted differences in filter efficiencies when comparing the test results from ASTM D3803-1979 and ASTM D3803-1989. The NRC has determined that ASTM D3803-1989 should be used for both new and used charcoal because it allows for accurately monitoring the degradation of the charcoal over time. Thus, ASTM D3803-1989 specifies testing both used and new charcoal in the same manner. The results from new charcoal tested via ASTM D3803-1989 present a solid baseline for the initial capability of the charcoal. Using ASTM D3803-1989 to test used charcoal is a very accurate and reproducible method for determining charcoal capability. By comparing the results of the tests performed on used

charcoal with the baseline test performed on new charcoal, the level of the charcoal's degradation can be ascertained.

GL 99-02 also indicates that poor reproducibility problems associated with laboratory surveillance testing can be resolved by performing the tests with calibrated equipment that is capable of maintaining the tight tolerances of the test parameters specified in ASTM D3803-1989.

As discussed in Reference 3, incorporation of GL 99-02 recommendations requires a revision to the CNS DBA radiological assessment calculational methodology such that the charcoal filter efficiency safety factors described in GL 99-02 could be credited. The current radiological consequence analyses of the CNS design basis events assume a particular ESF charcoal filter adsorption efficiency when calculating offsite and control room operator doses. The laboratory test acceptance criteria used in the proposed CNS TS change, contains a safety factor to ensure that the efficiency assumed in the accident analysis is still valid at the end of the operating cycle. GL 99-02 states that ASTM D3803-1989 is a more accurate and demanding test than ASTM D3803-1979, thus a minimum safety factor of 2 can be used to determine the TS acceptance criteria for charcoal filter efficiency. A proposed revision to the CNS DBA radiological assessment calculational methodology was submitted to the NRC via Reference 2 and includes revised charcoal filter efficiencies utilizing the safety factor guidance provided in GL 99-02. The charcoal efficiency of 95 percent used in the CNS DBA radiological assessment methodology submittal, combined with an allowable safety factor of 2, provides the basis for the 2.5 percent methyl iodide penetration acceptance criteria used in the attached CNS TS proposed revision.

3.0 DESCRIPTION OF CHANGES

The proposed CNS TS change replaces the requirement to laboratory test ESF ventilation system charcoal in accordance with ASTM D3803-1979 with that of ASTM D3803-1989, revises the acceptance criteria from a 99 percent methyl iodide removal rate to a 2.5 percent penetration, and omits the methyl iodide concentration and the ESF ventilation filter charcoal test flow rates.

CNS TS currently require laboratory testing of ESF ventilation system charcoal per ASTM D3803-1979 with the following specified conditions:

- For the CREF System, the test is conducted at 39 ft/min instead of the standard 40 ft/min due to filter face area and system flow rate.

- For the SGTS, the test is conducted at 70 percent relative humidity, due to heaters in the system, and at 27 ft/min instead of the standard 40 ft/min due to the filter face area and system flow rate.

Previous testing common to both SGTS and CREF System samples included:

- Sample brought to temperature equilibrium at 30 C and held for 16 hours.
- 2 hour challenge period with humidity as specified is introduced with the 1.75 mg/m^3 of radio-labeled CH_3I for 2 hours.
- Elution period - Flow maintained without changing relative humidity or temperature for a period of 4 hours.

A copy of the current CNS TS requirement for laboratory testing of ESF ventilation system charcoal is presented in Attachment 2 and is supplemented by the information presented in Table 1.

Table 1: Supplemental ESF Ventilation System Data

	Current System Data		**Revised System Data**	
	CREF System	SGTS	CREF System	SGTS
Individual Charcoal Bed Thickness: (inches)	2	2	2	2
Total Residence Time Per Bed Depth: (seconds)	0.25	0.37	0.25	0.30

The proposed CNS TS change (also presented in Attachment 2) will require laboratory testing of the charcoal in accordance with ASTM D3803-1989. The essential elements of the ASTM D3803-1989 test are as follows:

- 70 percent or 95 percent relative humidity.
- 2 hour minimum thermal stabilization period.
- 16 hour pre-equilibration time with air at 30 C and system specific relative humidity.
- 2 hour equilibration time with air at 30 C and system specific relative humidity.
- 1 hour challenge time with gas at 30 C and system specific relative humidity.
- 1 hour elution time with air at 30 C and system specific relative humidity.

The major differences between the current CNS TS charcoal laboratory testing protocol of ASTM D3803-1979 and the proposed CNS TS change to laboratory test charcoal per ASTM D3803-1989 are presented in Table 2.

Table 2: Major Differences Between ASTM D3803-1989 and ASTM D3803-1979 Testing Protocol

TEST PROTOCOL	ASTM D3803-1989	ASTM D3803-1979
Pre-Equilibration (16 hour duration for both)	Temperature and humidity	Temperature only
2 hour equilibration time (temp & humidity)	yes	no
Challenge time	1 hour	2 hours
Elution time	1 hour	4 hours

As indicated in GL 99-02, implementation of these revisions results in improved assurance of accurately and consistently determining the capability of the charcoal when performing laboratory testing of ESF ventilation system nuclear-grade charcoal samples.

The following will apply to the proposed testing;

- For the SGTS, the test will be conducted at 70 percent relative humidity (due to heaters in the system), and at 40 ft/min in accordance with ASTM D3803-1989.

- For the CREF System, the test will be conducted at 95 percent relative humidity (no heaters in the system), and at 40 ft/min in accordance with ASTM D3803-1989.

GL 99-02 and TS Task Force (TSTF)-362, Revision 0, both indicate that ESF ventilation system testing flow rates are not required to be included in TS if the system flow rates are not greater than 110 percent of 0.203 m/sec (40 ft/min). Since the CREF System and SGTS flow rates are not greater than 110 percent of 0.203 m/sec (40 ft/min), the flow rates are not included in the proposed TS. The methyl iodide concentration is also not included in the proposed CNS TS since ASTM D3803-1989 specifies the concentration to be used.

Laboratory charcoal test temperatures and relative humidity test values specified in the proposed TS change were not revised since the existing CNS TS values already reflect the ASTM D3803-1989 temperature and humidity test parameter limits for systems with or without ESF system relative humidity controls.

The associated TS Bases for Surveillance Requirement (SR) 3.6.4.3.2 and SR 3.7.4.2 will be revised to reflect the change following NRC approval of this requested TS change.

The methyl iodide penetration acceptance criterion of 2.5 percent used in the proposed TS is based on the DBA radiological consequence analysis submitted under Reference 2 and utilizes a safety factor of 2 as described in GL 99-02. A clean copy of the proposed CNS TS requirement for laboratory testing of ESF ventilation system charcoal is presented in Attachment 3.

The proposed changes to the CNS TS are also consistent with TSTF-362, Revision 0, as approved by the NRC to incorporate the recommendations of GL 99-02 into the Boiling Water Reactor (BWR)/4 Standard Technical Specifications (NUREG-1433, Revision 1).

4.0 JUSTIFICATION

NPPD agrees with the NRC position that ASTM D3803-1989 is the most accurate and realistic protocol for laboratory testing of ESF ventilation system charcoal samples because it offers the greatest assurance of accurately and consistently determining the capability of charcoal, and thus is the basis for this proposed change. ASTM D3803-1989 requires the charcoal testing to be conducted at a constant low temperature, provides for smaller tolerances in temperature, humidity, and air flow test parameters, and requires humidity pre-equilibrium. The determination of the appropriate test conditions for the proposed change are based upon ASTM D3803-1989 test criteria and the information presented in GL 99-02.

Analyses of CNS DBAs assume a particular ESF ventilation system charcoal filter adsorption efficiency when calculating offsite and control room operator doses. Charcoal filter samples are periodically tested to determine whether the ESF ventilation system filter adsorber efficiency is greater than that assumed in the DBA analyses. The laboratory test acceptance criteria typically contains a safety factor to ensure that the efficiency assumed in the accident analyses is still valid at the end of the operating cycle. Because ASTM D3803-1989 is a more accurate and demanding test than older tests, a safety factor as low as 2 may be used for determining the acceptance criteria for charcoal filter efficiency. This safety factor can be used for systems with or without humidity control because the lack of humidity control is accounted for in the test conditions, and is consistent with NRC approved safety factor for plants which have already adopted the ASTM D3803-1989 standard on a case-by-case basis.

The methyl iodide penetration acceptance criteria of 2.5 percent used in the proposed CNS TS is based on the DBA radiological assessment submitted under Reference 2 and utilizing a safety factor of 2 as described in GL 99-02. It should be noted that the current CNS TS utilizes the terminology "methyl iodide removal rate" which can be related to the "penetration" terminology used in GL 99-02 and the proposed TS by the equation:

Penetration = 100 percent- (methyl iodide removal rate (in percent)).

Thus, the methyl iodide removal rate acceptance criterion has been revised from 99 percent to 97.5 percent for ESF ventilation system laboratory charcoal testing using existing TS terminology and a safety factor of 2. This is reflected as a 2.5 percent penetration acceptance criterion in the proposed CNS TS for consistency with the Standard Technical Specifications.

Laboratory charcoal test temperatures, methyl iodide concentration and relative humidity test values specified in the proposed TS change were not revised since the existing CNS TS values already reflect the ASTM D3803-1989 temperature and humidity test parameters for systems with and without ESF system relative humidity controls. GL 99-02 and TSTF-362, Revision 0, both indicate that ESF ventilation system testing flow rates are not required to be included in TS if the system flow rates are not greater than 110 percent of 0.203 m/sec (40 ft/min). ESF ventilation system flow rates are not greater than 110 percent of 0.203 m/sec (40 ft/min), and therefore, per GL 99-02 and TSTF-362, Revision 0, are not required to be included in TS 5.5.7.c.

5.0 NO SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

10 CFR 50.91(a)(1) requires that licensee requests for operating license amendments be accompanied by an evaluation of significant hazards posed by the issuance of the amendment. This evaluation is to be performed with respect to 10 CFR 50.92(c). The following evaluation meets those requirements. The evaluation is based on the assumption that NPPD has received an NRC Safety Evaluation Report associated with the DBA radiological assessment calculational methodology revision submitted to the NRC under Reference 2.

1. Does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed charcoal testing changes and explicit reference to ASTM D3803-1989 nuclear-grade activated charcoal test protocol do not affect ESF ventilation system operation or performance, reliability, actuation setpoints, or accident mitigation capabilities. The proposed changes also do not affect the operation and performance of any other equipment important to safety at CNS. ASTM D3803-1989 is a more accurate and demanding test which ensures that the charcoal filter efficiencies assumed in the CNS accident dose analysis are maintained. The proposed changes involve ESF ventilation system charcoal testing only and do not affect accident initiators. Therefore the proposed changes do not significantly increase the probability or consequences of an accident previously evaluated in the USAR, as revised by the DBA radiological assessment calculational methodology revisions submitted to the NRC under Reference 2.

2. Does not create the possibility for a new or different kind of accident from any accident previously evaluated.

   The charcoal testing changes, and explicit reference to ASTM D3803-1989 nuclear-grade activated charcoal test protocol, do not affect ESF ventilation system operation or performance, or the operation and performance of any other equipment important to safety at CNS. The proposed changes clarify and explicitly identify the testing of the ESF ventilation system charcoal samples. No new or different accident scenarios, transient precursors, failure mechanisms, plant operating modes, or limiting single failures are introduced as a result of these changes. Therefore, the possibility of a new or different kind of accident from that previously evaluated in the USAR, as revised by the DBA radiological assessment calculational methodology revision submitted to the NRC under Reference 2, is not created by this change.

3. Does not create a significant reduction in the margin of safety.

   The required performance of the ESF ventilation systems following a DBA is not impacted by utilizing a more demanding protocol for charcoal testing. Thus, the margin of safety assumed in the CNS accident analysis, as revised by the DBA radiological assessment calculational methodology revision submitted to the NRC under Reference 2, is maintained. Revising the TS to clarify charcoal testing methodology and explicitly referencing the charcoal absorber testing being performed does not affect ESF ventilation system performance or operation, or the operation and performance of any other equipment important to safety at CNS. Therefore, these changes do not result in a significant reduction in the margin of safety.

6.0 ENVIRONMENTAL IMPACT EVALUATION

10 CFR 51.22(c)(9) provides criteria for, and identification of, licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration, (2) result in a significant change in the types or significant increase in the amount of any effluents that may be released offsite, or (3) result in an increase in individual or cumulative occupational radiation exposure. NPPD has reviewed the proposed license amendment and concludes that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). The environmental impact evaluation is based on the assumption that NPPD has received an NRC Safety Evaluation Report associated with the DBA radiological assessment calculational methodology revision submitted to the NRC under Reference 2. Pursuant to 10 CFR 51.22(c), no environmental impact statement or environmental assessment

needs to be prepared in connection with issuance of the proposed license change. The basis for this determination is as follows:

1. The proposed license amendment does not involve significant hazards as described previously in the No Significant Hazards Consideration Evaluation.

2. As discussed in the No Significant Hazards Consideration Evaluation, the proposed change to the charcoal sample test protocol for CNS ESF ventilation systems does not introduce any new equipment, nor does it require any existing equipment or systems to perform a different type of function than they are presently designed to perform during normal operation. NPPD has concluded that there will not be a significant increase in the types or amounts of effluents that may be released offsite and these changes do not involve irreversible environmental consequences beyond those already associated with normal operation.

3. The proposed change involves a revision to the TS requirements for laboratory testing of ESF ventilation system charcoal samples. As discussed in the No Significant Hazards Consideration Evaluation, this change does not affect plant systems or operation. The proposed change requires a more accurate and demanding test of ESF ventilation system charcoal, and assures that the ESF ventilation system charcoal efficiency assumed in the CNS DBA radiological dose consequence calculations is maintained. Thus, the proposed change does not increase individual or cumulative occupational radiation exposure beyond that already associated with normal operation.

7.0 CONCLUSION

NPPD has evaluated the proposed change to the CNS TS on laboratory testing of ESF ventilation system charcoal samples against the criteria given in 10 CFR 50.92 (c) in accordance with the requirements of 10 CFR 50.91(a)(1). This evaluation has determined that the proposed changes will not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility for a new or different kind of accident from any previously evaluated; or 3) create a significant reduction in the margin of safety. Therefore, for the reasons detailed above, NPPD requests NRC approval of the proposed amendment.

8.0 REFERENCES

1. NRC Generic Letter 99-02, Laboratory Testing of Nuclear-Grade Activated Charcoal, dated June 3, 1999, as supplemented by NRC Generic Letter 99-02, (Errata): Laboratory Testing of Nuclear Grade Activated Charcoal, dated August 23, 1999.

2. Letter (NLS2001011) from John H. Swailes (NPPD) to U.S. Nuclear Regulatory Commission, dated February 28, 2001, Proposed License Amendment Related to the Design Basis Accident Radiological Assessment Calculational Methodology.

3. Letter (NLS2001002) from John H. Swailes (NPPD) to U.S. Nuclear Regulatory Commission, dated January 2, 2001, Withdrawal of Proposed Technical Specification Change to Incorporate Generic Letter 99-02, Laboratory Testing Requirements for Nuclear-Grade Activated Charcoal.

EXISTING TECHNICAL SPECIFICATION 5.5.7.c
AND
MARK-UP OF PROPOSED CHANGE
AND ASSOCIATED BASES REVISIONS

COOPER NUCLEAR STATION
NRC DOCKET NO. 50-298, LICENSE DPR-46

Listing of Revised Pages

Technical Specifications
5.0-12

Associated Technical Specification Bases*
B 3.6-84
B 3.6-85
B 3.7-21

*Bases will be implemented following approval
of the proposed Technical Specification changes in accordance with
TS 5.5.10, Technical Specification (TS) Bases Control Program.

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, Section C.6.b shows the methyl iodide removal rate greater than or equal to the value specified below when tested in accordance with ASTM D3803-1979 at the conditions specified below.

	ESF Ventilation System	
	SGT System	Control Room Emergency Filter System
Methyl iodide removal rate: (%)	$\geq$ 99	$\geq$ 99
Methyl iodide concentration: (mg/m^3)	$\geq$ 1.75	$\geq$ 1.75
Flow rate: (feet per minute)	$\geq$ 27	$\geq$ 39
Temperature: (degrees C)	$\leq$ 30	$\leq$ 30
Relative Humidity: (%)	$\geq$ 70	$\geq$ 95

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified as follows:

ESF Ventilation System	Delta P (inches Wg)	Flowrate (cfm)
SGT System	< 6	1602 to 1958
Control Room Emergency Filter System	< 6	810 to 990

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, Section C.6.b shows the methyl iodide ~~removal rate greater~~ penetration less than or equal to the value specified below when tested in accordance with ASTM D3803-~~1979~~1989 at ~~the conditions~~ a temperature of 30°C(86°F) and the relative humidity specified below.

	ESF Ventilation System	
	Penetration: (%)	Relative Humidity: (%)
SGT System	2.5	70
Control Room Emergency Filter System	2.5	95

	~~SGT System~~	~~Control Room Emergency Filter System~~
~~Methyl iodide removal rate: (%)~~	~~≥ 99~~	~~≥ 99~~
~~Methyl iodide concentration: (mg/m^3)~~	~~≥ 1.75~~	~~≥ 1.75~~
~~Flow rate: (feet per minute)~~	~~≥ 27~~	~~≥ 39~~
~~Temperature: (degrees C)~~	~~≤ 30~~	~~≤ 30~~
~~Relative Humidity: (%)~~	~~≥ 70~~	~~≥ 95~~

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified as follows:

ESF Ventilation System	Delta P (inches Wg)	Flowrate (cfm)
SGT System	< 6	1602 to 1958
Control Room Emergency Filter System	< 6	810 to 990

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1 (continued)

fan motors and controls and the redundancy available in the system.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). ~~The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4).~~ The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components will pass the Surveillance when performed at the 18 month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.6.4.3.4

This SR verifies that the SGT units cross tie damper is in the correct position, and that each SGT room air supply check valve and each air operated SGT dilution air shutoff valve open when the associated SGT subsystem fan is running. This ensures that the ventilation mode of SGT System operation is available. If the position of the SGT units cross tie damper is greater than or less than the position required for two OPERABLE SGT subsystems and one SGT subsystem is isolated with initiation of that SGT subsystem prevented, then the SGT units cross tie damper position requirement of SR 3.6.4.3.4 continues to be met for the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.4 (continued)

remaining OPERABLE SGT subsystem, since, in this condition, adequate ventilation is available for decay heat removal from the remaining OPERABLE SGT subsystem. However, both SGT subsystems are inoperable if the SGT units cross tie damper position requirement is not met and one SGT subsystem is not isolated with initiation of that SGT subsystem prevented. If either SGT room air supply check valve or either SGT dilution air shutoff valve is inoperable, then the associated SGT subsystem is inoperable. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components will pass the Surveillance when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. USAR, Appendix F.
2. USAR, Section V-3.3.4.
3. 10 CFR 50.36(c)(2)(ii).
4. ~~Regulatory Guide 1.52, Rev. 2.~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.4.2

This SR verifies that the required CREF testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). ~~The CREF filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4).~~ The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.4.3

This SR verifies that on an actual or simulated initiation signal, the CREF System starts and operates. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1, "Control Room Emergency Filter (CREF) System Instrumentation," overlaps this SR to provide complete testing of the safety function. The 18 month Frequency is specified in Reference 4.

SR 3.7.4.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the CREF System. During the emergency mode of operation, the CREF System is designed to slightly pressurize the control room $\geq$ 0.1 inches water gauge positive pressure with respect to the adjacent areas to prevent unfiltered inleakage. The CREF System is designed to maintain this positive pressure at a flow rate of $\leq$ 990 cfm to the control room in the pressurization mode. The Frequency of 18 months is consistent with industry practice and other filtration systems SRs.

REFERENCES

1. USAR, Chapter X.
2. USAR, Chapter XIV.
3. 10 CFR 50.36(c)(2)(ii).
4. Regulatory Guide 1.52, Revision 2, March 1978.

PROPOSED CHANGE TO TECHNICAL SPECIFICATION 5.5.7.c
AND ASSOCIATED BASES REVISIONS
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COOPER NUCLEAR STATION
NRC DOCKET NO. 50-298, LICENSE DPR-46

Listing of Revised Pages

Technical Specifications
5.0-12

Associated Technical Specification Bases
B 3.6-84
B 3.6-85
B 3.7-21

*Bases will be implemented following approval
of the proposed Technical Specification changes in accordance with
TS 5.5.10, Technical Specification (TS) Bases Control Program.

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, Section C.6.b shows the methyl iodide penetration less than or equal to the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C(86°F) and the relative humidity specified below.

	ESF Ventilation System	
	Penetration: (%)	Relative Humidity: (%)
SGT System	2.5	70
Control Room Emergency Filter System	2.5	95

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified as follows:

ESF Ventilation System	Delta P (inches Wg)	Flowrate (cfm)
SGT System	< 6	1602 to 1958
Control Room Emergency Filter System	< 6	810 to 990

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1 (continued)

fan motors and controls and the redundancy available in the system.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components will pass the Surveillance when performed at the 18 month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.6.4.3.4

This SR verifies that the SGT units cross tie damper is in the correct position, and that each SGT room air supply check valve and each air operated SGT dilution air shutoff valve open when the associated SGT subsystem fan is running. This ensures that the ventilation mode of SGT System operation is available. If the position of the SGT units cross tie damper is greater than or less than the position required for two OPERABLE SGT subsystems and one SGT subsystem is isolated with initiation of that SGT subsystem prevented, then the SGT units cross tie damper position requirement of SR 3.6.4.3.4 continues to be met for the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.4 (continued)

remaining OPERABLE SGT subsystem, since, in this condition, adequate ventilation is available for decay heat removal from the remaining OPERABLE SGT subsystem. However, both SGT subsystems are inoperable if the SGT units cross tie damper position requirement is not met and one SGT subsystem is not isolated with initiation of that SGT subsystem prevented. If either SGT room air supply check valve or either SGT dilution air shutoff valve is inoperable, then the associated SGT subsystem is inoperable. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components will pass the Surveillance when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. USAR, Appendix F.
2. USAR, Section V-3.3.4.
3. 10 CFR 50.36(c)(2)(ii).

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.4.2

This SR verifies that the required CREF testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.4.3

This SR verifies that on an actual or simulated initiation signal, the CREF System starts and operates. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1, "Control Room Emergency Filter (CREF) System Instrumentation," overlaps this SR to provide complete testing of the safety function. The 18 month Frequency is specified in Reference 4.

SR 3.7.4.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the CREF System. During the emergency mode of operation, the CREF System is designed to slightly pressurize the control room $\geq$ 0.1 inches water gauge positive pressure with respect to the adjacent areas to prevent unfiltered inleakage. The CREF System is designed to maintain this positive pressure at a flow rate of $\leq$ 990 cfm to the control room in the pressurization mode. The Frequency of 18 months is consistent with industry practice and other filtration systems SRs.

REFERENCES

1. USAR, Chapter X.
2. USAR, Chapter XIV.
3. 10 CFR 50.36(c)(2)(ii).
4. Regulatory Guide 1.52, Revision 2, March 1978.

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The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
None.	