Nebraska Public Power District
Nebraska's Energy Leader

NLS990117
December 2, 1999

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

Gentlemen:

Subject: Response to Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Charcoal"
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

References:
1. NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal", dated June 3, 1999.
2. NRC Generic Letter 99-02 (ERRATA): "Laboratory Testing of Nuclear Grade Activated Charcoal", dated August 23, 1999.

The purpose of this letter is to provide the Nebraska Public Power District (District) 180 day response to Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," for Cooper Nuclear Station (CNS), References 1 and 2. The 180 day response is presented in Attachment 1. The District plans to submit a Technical Specification change which incorporates the laboratory testing protocol of American Society for Testing and Materials (ASTM) D3803-1989 for Engineered Safety Feature (ESF) ventilation system charcoal samples by December 23, 1999.

On June 3, 1999, the NRC issued GL 99-02 to alert licensees that testing nuclear-grade activated charcoal to standards other than ASTM D3803-1989, Standard Test Method for Nuclear-Grade Activated Carbon, may be deficient. Licensees, whose Technical Specifications do not currently reference ASTM D3803-1989 for laboratory testing of ESF charcoal samples, were requested to either amend their Technical Specifications to reference ASTM D3803-1989 or propose an alternative test protocol.

Based on the information provided in GL 99-02, CNS is presently categorized as a Group 2 plant. CNS Technical Specification 5.5.7.c currently specifies ASTM D3803-1979 for laboratory testing of ESF charcoal samples. Thus, Technical Specification laboratory testing of ESF charcoal samples is presently based on a test protocol other than ASTM D3803-1989.

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The last scheduled laboratory test of ESF charcoal samples was completed prior to August 2, 1999. This testing was completed in accordance with the present CNS Technical Specifications. The next laboratory test of ESF charcoal samples is scheduled for the spring of 2000. The testing will be performed in accordance with ASTM D3803-1989 protocol or the charcoal will be replaced with charcoal tested in accordance with ASTM D3803-1989.

As discussed in Generic Letter 99-02, conflicting regulatory guidance, complex and ambiguous standards, and the belief that the ASTM D3803-1979 standard would satisfy Technical Specification requirements, contributed to confusion regarding charcoal testing. Although the District has been using an earlier version of ASTM D3803, the District believes that, on the basis of the information provided in Generic Letter 99-02 and available laboratory test results, the charcoal in use is not degraded to an extent that would adversely affect control room habitability or the public health and safety. This confidence in charcoal performance and the low probability of a design basis accident, justify the time frames for the resolution of this matter. Since the District intends to conduct future laboratory testing of ESF charcoal samples in accordance with the ASTM D3803-1989 protocol it is requested that the NRC exercise enforcement discretion, consistent with Section VII.B.6 of the Enforcement Policy as described in Generic Letter 99-02, to allow the District to conduct laboratory testing of ESF ventilation system charcoal samples per ASTM D3803-1989 vice the current Technical Specification requirement to test per ASTM D3803-1979.

Should you have any questions concerning this matter, please contact Mr. Paul Caudill at (402) 825-5052.

Sincerely,

John H. Swailes
Vice President of Nuclear Energy

/rlb

Attachments

cc: Regional Administrator w/attachments and enclosures
USNRC - Region IV

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

Senior Resident Inspector w/attachments and enclosures
USNRC

NPG Distribution w/o attachments and enclosures

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 2 day of December, 1999.

Wilma M. Werner
General Notary
State of Nebraska
My Commission Expires Oct. 26, 2002

NOTARY PUBLIC

Generic Letter 99-02 Requested Actions and Associated District Responses

NRC Requested Action 1:

Within 180 days of the date of this generic letter, submit a written response to the NRC describing your current TS requirements for the laboratory testing of charcoal samples for each ESF ventilation system including the specific test protocol, temperature, RH, charcoal bed thickness, total residence time per bed depth, and penetration at which the TS require the test to be performed. If your current TS specifically require laboratory testing of charcoal samples in accordance with the ASTM D3803-1989 protocol at 30° C [86° F], and you have been testing in accordance with this standard, then you only need to address this requested action (i.e., no TS amendment or additional testing is required).

District Response Action 1:

The CNS Standby Gas Treatment system (SGT) and the Control Room Ventilation Filtration System (CREFS) are identified in CNS Technical Specification 5.5.7.c as ESF ventilation systems requiring laboratory testing of their nuclear-grade activated charcoal filters.

Technical Specification 5.5.7.c currently requires laboratory testing of the charcoal in these ESF ventilation systems in accordance with ASTM D3803-1979, *Radioiodine Testing of Nuclear-Grade Gas-Phase Adsorbents*, with the following exceptions:

> For the SGT system the test is conducted at 70% relative humidity, due to heaters in the system, and at 27 ft/min instead of 40 ft/min due to the filter face area and system flow rate.
>
> For the Control Room Emergency Filter System (CREFS) the test is conducted at 39 ft/min instead of 40 ft/min due to filter face area and system flow rate.

Testing common to both SGT and CREFS charcoal samples include:

- Sample is brought to temperature equilibrium at 30°C and held for 16.0 hours.
- 2 hour challenge period with humidity as specified is introduced with the 1.75 mg/m^3 of CH_3I for 2 hours
- Elution period - Flow is maintained without changing relative humidity or temperature for a period of 4 hours.

A copy of the current CNS Technical Specification for laboratory testing of ESF ventilation system charcoal is presented in Attachment 2 and is supplemented by the following information:

ESF Ventilation System

	SGT System	Control Room Emergency Filter System
Individual Charcoal Bed Thickness: (inches)	2	2
Total Residence Time Per Bed Depth: (sec)	0.37	0.25

It should be noted that Technical Specification 5.5.7.c utilizes the terminology "Methyl iodide removal rate" which can be related to the "penetration" terminology used in GL 99-02 by the equation;

Penetration = 100% - (methyl iodide removal rate%)

The major differences between the current CNS Technical Specification laboratory testing criteria of ASTM D3803-1979 and the criteria specified in ASTM D3803-1989 are as follows:

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

NRC Requested Action 2:

If you choose to adopt the ASTM D3803-1989 protocol, submit a TS Amendment request to require testing to this protocol within 180 days of the date of this generic letter. The request should contain the test temperature, RH, and penetration at which the proposed TS will require the test to be performed and the basis for these values. If the system has a face velocity greater than [110] (August 23, 1999 errata) percent of 0.203m/s [40 ft/min], then the revised TS should specify the face velocity. Also, indicate when the next laboratory test is scheduled to be performed.

District Response Action 2:

As discussed with the CNS NRC Project Manager and the GL 99-02 Lead Project Manager in a conference call held November 18, 1999, the District intends to submit a Technical Specification change to revise Technical Specification 5.5.7.c to adopt the laboratory testing protocol of ASTM D3803-1989 for ESF ventilation system charcoal samples. The current Technical Specification surveillance interval for this specification will be retained.

The proposed Technical Specification change will contain the test temperature, relative humidity, and face velocity at which the proposed Technical Specification will require the test to be performed. The allowable penetration will be specified as minimum removal efficiency as defined earlier in this attachment. The proposed change will include the basis for any Technical Specification 5.5.7.c values being revised as a result of Generic Letter 99-02.

The next laboratory test of ESF ventilation system charcoal samples is scheduled in the spring of 2000.

NRC Requested Action 3:

If you are proposing an alternate test protocol, address the attributes discussed in the GL and submit a TS amendment request to require testing to this alternate protocol within 180 days of the date of this generic letter. The request should contain the test temperature, RH, and penetration at which the proposed TS will require the test to be performed and the basis for these values. If the system has a face velocity greater than [110] (August 23, 1999 errata) percent of 0.203 m/s [40 ft/min], then the revised TS should specify the face velocity. Also, indicate when the next laboratory test is scheduled to be performed.

District Response Action 3:

The District is not proposing an alternate test protocol for use at CNS.

NRC Requested Action 4:

At the next required laboratory surveillance test of a charcoal sample that is 60 or more days after the date of this generic letter, test your charcoal samples in accordance with ASTM D3803-1989 or replace all of the charcoal with new charcoal that has been tested in accordance with ASTM D3803-1989. In all cases, the results should meet the acceptance criterion that is derived from applying a safety factor as low as 2 (see the note in Enclosure 2 of the GL) to the charcoal filter efficiency assumed in your design-basis dose analysis and the charcoal samples should continue to be tested in accordance with ASTM D3803-1989, in lieu of the current TS-required laboratory testing until the TS amendment is approved by the NRC.

District Response Action 4:

Laboratory testing of ESF ventilation system charcoal performed after August 2, 1999 will be conducted in accordance with the ASTM D3803-1989 test protocol. ESF ventilation system charcoal which requires replacement after August 2, 1999, will be replaced with charcoal tested in accordance with the ASTM D3803-1989 test protocol. Design-basis dose analysis are being revised such that the charcoal efficiency acceptance criterion for ESF ventilation system charcoal laboratory tested after this date, is derived by applying at least a safety factor of 2 to the charcoal filter efficiency assumed in the revised CNS design basis dose analysis. The revised dose analysis results will be included as basis information for the proposed Technical Specification change to adopt the ASTM D3803-1989 test protocol for laboratory testing of ESF ventilation system charcoal discussed earlier in this attachment.

NRC Requested Action 5:

Addressees who choose not to do the above actions are requested to notify the NRC in writing of their decision, as soon as the decision is reached but no later than 60 days from the date of this generic letter. The 60 day written response should also discuss (1) addressee plans to pursue a proposed alternative course of action (including the basis for establishing its acceptability), (2) the schedule for submitting that proposal for NRC staff review (that proposal should be submitted to the NRC no later than 180 days from the date of this generic letter), and (3) the basis for continued operability of affected systems and components until such time that the proposed alternative course of action is approved by the NRC.

District Response Action 5:

The District plans to implement the recommendations of GL 99-02, therefore no 60 day response was required.

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: (%)	≥ 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)

Correspondence No: NLS990117

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
Submit Technical Specification change which incorporates the laboratory testing protocol of ASTM D3803-1989 for ESF ventilation system charcoal samples by 12/23/99.	12/23/99
Laboratory testing of ESF ventilation system charcoal samples subsequent to 8/2/99 will be conducted per ASTM D3803-1989 protocol using the acceptance criteria specified in the 12/23/99 Technical Specification submittal.	Next scheduled test after 8/2/99 (Spring 2000)
ESF ventilation system charcoal which requires replacement after 8/2/99 will be replaced with charcoal tested in accordance with ASTM D3803-1989 test protocol.	As required following 8/2/99.