



Carolina Power & Light Company

Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

Serial: RNP-RA/99-0233

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United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

**REQUEST FOR TECHNICAL SPECIFICATION
CHANGE TO THE VENTILATION FILTER TESTING
PROGRAM AND RESPONSE TO GENERIC LETTER 99-02,
"LABORATORY TESTING OF NUCLEAR-GRADE ACTIVATED CHARCOAL"**

Ladies and Gentlemen:

Carolina Power & Light (CP&L) Company requests a change to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 in accordance with 10 CFR 50.90. The proposed change revises the testing requirements in the Ventilation Filter Testing Program (VFTP). Additionally, this letter provides the response to Generic Letter (GL) 99-02, "Laboratory Testing Of Nuclear-Grade Activated Charcoal."

Attachment I provides an affidavit as required by 10 CFR 50.30(b).

Attachment II provides the response to GL 99-02.

Attachment III provides a description of the current condition, a description of the proposed change, a safety assessment, a basis for a conclusion that the proposed change does not involve a significant hazards consideration and an environmental impact consideration which demonstrates that the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c).

Attachment IV provides a markup of the TS and Bases.

Attachment V provides retyped pages for the TS and Bases.

In accordance with 10 CFR 50.91(b), CP&L is providing the State of South Carolina with a copy of this letter with attachments.

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CP&L requests that the proposed change be reviewed and approved by June 1, 2000.

If you have any questions on this subject, please contact Mr. H. K. Chernoff.

Sincerely,



R. L. Warden

Manager - Regulatory Affairs

ALG/alg

Attachments

- I. Affidavit
 - II. Response to Generic Letter 99-02, "Laboratory Testing Of Nuclear-Grade Activated Charcoal"
 - III. Request for Technical Specification Change, Ventilation Filter Testing Program
 - IV. Markup of Current Technical Specification and Bases Pages
 - V. Retyped Technical Specification and Bases
- c: Mr. Max K. Batavia, Chief, Bureau of Radiological Health (SC)
NRC Resident Inspector, HBRSEP
Mr. L. A. Reyes, NRC, Region II
Mr. R. Subbaratnam, NRC, NRR
Attorney General (SC) (w/out Attachments)

Affidavit

State of South Carolina
County of Darlington

D. E. Young, having been first duly sworn, did depose and say that the information contained in letter RNP-RA/99-0233 is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Dale E Young

Sworn to and subscribed before me

this 23rd day of November 1999

(Seal) Albert A. Carron
Notary Public for South Carolina

My commission expires: March 22nd 2005

H. B. Robinson Steam Electric Plant, Unit No. 2
Response to Generic Letter 99-02,
“Laboratory Testing Of Nuclear-Grade Activated Charcoal”

1. Within 180 days of the date of this generic letter, submit a written response to the NRC describing your current TS [Technical Specification] requirements for the laboratory testing of charcoal samples for each ESF [Engineered Safety Features] ventilation system including the specific test protocol, temperature, RH [Relative Humidity], 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 [American Society for Testing and Materials] 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).

Response

Technical Specification (TS) Section 5.5.11, “Ventilation Filter Testing Program (VFTP),” paragraph c, describes the testing requirements and standards for charcoal samples taken from ESF ventilation systems. The testing requirements and standards vary with the ESF ventilation system according to the NRC requirements in effect at the time that the requirements were imposed. The TS currently require the demonstration for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with the referenced standard, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1986 at a relative humidity of $\geq 70\%$. Additional parameters of the current TS requirements are provided below.

<u>ESF Filter System</u>	<u>Bed Depth (Inches)</u>	<u>Residence Time (Seconds)</u>	<u>Penetration Percentage</u>	<u>Reference Std</u>
Control Room Emergency	2	0.409	< 1	Regulatory Guide 1.52, Revision 2, March 1978, C.6.a, C.6.b (using ANSI N510-1980)
Spent Fuel Building	2	0.278	≤ 10	ANSI/ASME N509-1976, Table 5-1, Test 5.b
Containment Purge	2	0.275	≤ 10	ANSI/ASME N509-1976, Table 5-1, Test 5.b

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 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. (Enclosure 2 is a sample TS that the NRC considers acceptable.)

Response

A request for change to the TS Ventilation Filter Testing Program is attached to this letter. The face velocity is less than 110 percent of 40 feet/minute. The ESF ventilation filter systems were tested to the current TS requirements and the proposed TS requirements as attached to this letter. Testing was performed in June, July, and August 1999. The next scheduled tests will be in approximately 18 months according to the completion dates of the current tests.

H. B. Robinson Steam Electric Plant, Unit No. 2
REQUEST FOR TECHNICAL SPECIFICATION CHANGE
VENTILATION FILTER TESTING PROGRAM

Description of Current Condition

Technical Specification (TS) Section 5.5.11, "Ventilation Filter Testing Program (VFTP)," paragraph c, describes the testing requirements and standards for charcoal samples taken from Engineered Safety Features (ESF) ventilation systems. The testing requirements and standards vary with the ESF ventilation system according to the NRC requirements in effect at the time that the requirements were imposed. The TS requires that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with the referenced standard, shows the methyl iodide penetration less than the value specified for the particular ventilation system when tested in accordance with American Standard for Testing and Materials (ASTM) D3803-1986 at a relative humidity of $\geq 70\%$.

Additionally, the Control Room Emergency Ventilation System is required to be tested in accordance with Regulatory Guide (RG) 1.52, Revision 2, March 1978, Position C.6.a, and C.6.b, with the exception that American National Standards Institute (ANSI) Standard ANSI N510-1980 is used instead of ANSI N510-1975 for in-place testing acceptance criteria. The Spent Fuel Building and Containment Purge ventilation systems charcoal is tested to the acceptance criteria of ASTM/American Society of Mechanical Engineers (ASME) standard ASTM/ANSI N509-1976, Table 5-1, Test 5.b.

Generic Letter (GL) 99-02, "Laboratory Testing Of Nuclear-Grade Activated Charcoal," was issued on June 3, 1999. In GL 99-02 the NRC Staff concluded that ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," should be used for testing nuclear grade activated charcoal in lieu of previous standards.

Description of the Proposed Change

TS 5.5.11.c is proposed to be revised to state the following.

"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, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°) and the relative humidity specified below."

<u>ESF Filter System</u>	<u>Penetration</u>	<u>RH</u>
Control Room Emergency	$\leq 2.5\%$	70%

Spent Fuel Building	≤10%	70%
Containment Purge	≤10%	95%

Safety Assessment

Safety-related air-cleaning units used in the ESF ventilation systems of nuclear power plants reduce the potential onsite and offsite consequences of a radiological accident by adsorbing radioiodine. To ensure that the charcoal filters used in these systems will perform in a manner that is consistent with the licensing basis, the TS require periodic testing (in a laboratory) of samples of charcoal taken from the air-cleaning units.

The testing requirements stated in the VFTP references either RG 1.52, "Design, Testing, and Maintenance Criteria for Post-accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," Revision 2, or Table 5-1 of ANSI N509-1976, "Nuclear Power Plant Air-Cleaning Units and Components."

The NRC has stated concerns in GL 99-02 about laboratory testing of charcoal regarding the variation in laboratory test results obtained (methyl iodide penetration) when temperature, RH, face velocity, bed depth, test protocol, and impregnate were varied. The NRC is concerned that testing to versions of ASTM D3803 other than the 1989 version may show significantly higher iodine-removal capabilities than the results from the 1989 version and that testing to other standard versions results in an overestimation of the actual iodine-removal capability of the charcoal.

The NRC has determined that continued use of standards other than ASTM D3803-1989 for testing of nuclear-grade activated charcoal is no longer acceptable and that ASTM D3803-1989 should be used for both new and used charcoal.

Therefore, because the proposed change to the VFTP references ASTM D3803-1989 which is considered by the NRC to be a more accurate and demanding test than older tests, the proposed change is considered acceptable.

In the interim period until the proposed change to the VFTP is approved, testing to both the existing TS required standards and ASTM D3803-1989 will be performed to ensure compliance with the current TS, and to ensure compliance with the amended TS when approved without requiring additional testing prior to implementation of the amendment.

No Significant Hazards Consideration Determination

Carolina Power & Light (CP&L) Company has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. The CP&L conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change to Technical Specification Section 5.5.11, "Ventilation Filter Testing Program," does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change updates the required testing of Engineered Safety Features (ESF) ventilation filter systems to more recent testing standards accepted by the NRC and described in Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal." The NRC has found that charcoal filter test protocols other than American Society for Testing and Materials (ASTM) standard ASTM D3803-1989 do not assure accurate and reproducible test results. Since this proposed change references an acceptable testing standard and provides assurance that the current licensing basis is met, the proposed change does not involve an increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change does not introduce a new mode of operation or changes in the method of normal plant operation. The proposed change introduces a new testing standard for ESF ventilation system charcoal samples removed for testing and does not involve manipulation of plant systems to perform the charcoal test. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

The proposed change revises the required testing standard for ESF ventilation charcoal filter systems and does not alter plant design margins or analysis assumptions as described in the Updated Final Safety Analysis Report. The proposed change does not affect any limiting safety system setpoint, calibration method, or setpoint calculation. The proposed change is more restrictive with regard to testing protocol and less

restrictive with respect to the allowed penetration during testing of the Control Room ventilation system charcoal. However, the allowed increase in penetration is in accordance with the method for determining the allowable penetration described in GL 99-02. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Environmental Impact Consideration

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions for categorical exclusion for performing an environmental assessment. A proposed change for an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. This request has been reviewed and has been determined to meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance with the amendment. The basis for this determination follows.

Proposed Change

This request proposes to revise Technical Specification Section 5.5.11, "Ventilation Filter Testing Program," to reference an acceptable standard for testing charcoal used in ventilation filter systems.

Basis

The proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons.

1. As demonstrated in the No Significant Hazards Evaluation, the proposed changes do not involve a significant hazards consideration.
2. The proposed change is limited to revising the testing standard used by testing laboratories for Engineered Safety Features (ESF) ventilation system charcoal. This change does not affect plant power level or effluents, nor does this change increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore the proposed change does not result in a significant change in the types, or significant increase in the amounts, of any effluent that may be released offsite.
3. The proposed change does not involve a physical change to the facility design, configuration, operation, or maintenance. The proposed change is limited to revising the testing standard used by testing laboratories for ESF ventilation system charcoal. Therefore the proposed change does not affect individual or cumulative occupational radiation exposure.

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Attachment IV to Serial: RNP-RA/99-0233
2 Pages

H. B. Robinson Steam Electric Plant, Unit No. 2
REQUEST FOR TECHNICAL SPECIFICATION CHANGE
VENTILATION FILTER TESTING PROGRAM

MARKUP OF CURRENT TECHNICAL SPECIFICATION
AND BASES PAGES

as described in Regulatory Guide 1.52, Revision 2

5.5 Programs and Manuals

5.5.11 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 in accordance with the referenced standard, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1986 at a relative humidity of $\geq 70\%$.

temperature of 30°C (86°) and the relative humidity specified below.

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<u>RH</u>	<u>ESF Filter System</u>	<u>Penetration</u>	<u>Reference Std</u>
70%	Control Room Emergency	$\leq 1\%$	Regulatory Guide 1.52, Revision 2, March 1978, C.6.a, C.6.b (using ANSI N510-1980)
70%	Spent Fuel Building	$\leq 10\%$	ANSI/ASME N509-1976, Table 5-1, Test 5.b
95%	Containment Purge	$\leq 10\%$	ANSI/ASME N509-1976, Table 5-1, Test 5.b

$\leq 2.5\%$

The representative sample from the Control Room Emergency Filtration System shall be tested at a temperature $\leq 30^\circ\text{C}$.

(continued)

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Attachment V to Serial: RNP-RA/99-0233
2 Pages

H. B. Robinson Steam Electric Plant, Unit No. 2
REQUEST FOR TECHNICAL SPECIFICATION CHANGE
VENTILATION FILTER TESTING PROGRAM

RETYPE TECHNICAL SPECIFICATION AND BASES

5.5 Programs and Manuals

5.5.11 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, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°) and the relative humidity specified below.

<u>ESF Filter System</u>	<u>Penetration</u>	<u>RH</u>
Control Room Emergency	≤2.5%	70%
Spent Fuel Building	≤10%	70%
Containment Purge	≤10%	95%

(continued)