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Nuclear Business Unit

NOV 24 1999

LR-N99474
LCR H99-10

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

Gentlemen:

**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
CHARCOAL FILTER TESTING CHANGES REQUIRED BY
GENERIC LETTER 99-02
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354**

In accordance with 10CFR50.90, Public Service Electric & Gas (PSE&G) Company hereby requests a revision to the Technical Specifications (TS) for the Hope Creek Generating Station (HC). In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

Implementation of the proposed changes contained in this submittal will establish charcoal filter testing requirements for the Control Room Emergency Filtration (CREF) System and the Filtration, Recirculation and Ventilation System (FRVS) Recirculation and Ventilation Subsystems consistent with the requirements delineated in Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999. Specifically, the surveillance requirements associated with Limiting Condition for Operation (LCO) 3.6.5.3.1, 3.6.5.3.2 and 3.7.2 will now specify testing methodology that is consistent with American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon."

The proposed changes have been evaluated in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and a determination has been made that this request involves no significant hazards considerations. The basis for the requested change is provided in Attachment 1 to this letter. A 10CFR50.92 evaluation, with a determination of no significant hazards consideration, is provided in Attachment 2. The marked up Technical Specification pages affected by the proposed changes are provided in Attachment 3.

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The power is in your hands.

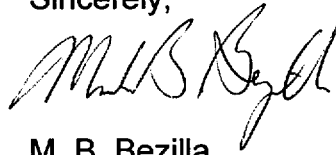
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During the development of these TS changes, PSE&G identified several discrepancies in the Hope Creek UFSAR descriptions of FRVS charcoal filter iodine removal efficiency assignments. The Corrective Action Program is being used to resolve these issues and track the required changes that will correct Hope Creek's licensing basis information in the UFSAR. However, these UFSAR changes do not impact the justification for the proposed TS changes contained in this submittal.

Upon NRC approval of this proposed change, PSE&G requests that the amendment be made effective on the date of issuance, but allow an implementation period of sixty days to provide sufficient time for associated administrative activities. Should you have any questions regarding this request, please contact Mr. James Priest at 856-339-5434.

Sincerely,



M. B. Bezilla
Vice President - Operations

Affidavit
Attachments (3)

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Microfilm Copy
Files Nos. 1.2.1 (Hope Creek), 2.3 (LCR H99-10)

**HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354
REVISIONS TO THE TECHNICAL SPECIFICATIONS (TS)**

BASIS FOR REQUESTED CHANGE:

Public Service Electric and Gas Company (PSE&G), under Facility Operating License No. NPF-57 for the Hope Creek Generating Station, requests that the TS contained in Appendix A to the Operating License be amended as proposed herein to revise TS surveillance requirements contained in Limiting Condition for Operation (LCO) 3.6.5.3.1, 3.6.5.3.2 and 3.7.2. The proposed changes would revise the Hope Creek TS to become consistent with the NRC requirements delineated in Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal."

As stated in Generic Letter 99-02, the NRC determined that testing nuclear-grade activated charcoal to standards other than American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," does not provide assurance for complying with the current licensing basis as it relates to the dose limits of General Design Criterion (GDC) 19 of Appendix A to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR) and Subpart A of 10 CFR Part 100. The NRC staff 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. The results from the new charcoal tested via ASTM D3803-1989 present a solid baseline for the initial capability of the charcoal. In addition, the NRC stated that using ASTM D3803-1989 to test used charcoal is a very accurate and reproducible method for determining the capability of the charcoal. By comparing the results of the tests performed on used charcoal with the baseline test performed on new charcoal, licensees can be certain of the charcoal's level of degradation.

REQUESTED CHANGE, PURPOSE AND BACKGROUND:

The TS changes associated with this request are contained in Attachment 3. The proposed changes affect TS Surveillance Requirements 4.6.5.3.1.c.2, 4.6.5.3.1.d, 4.6.5.3.2.c.2, 4.6.5.3.2.d, 4.7.2.c.2 and 4.7.2.d. The purpose of these changes is to implement Filtration, Recirculation and Ventilation System (FRVS) and Control Room Emergency Filtration (CREF) System charcoal filter testing requirements and acceptance criteria that are consistent with NRC requirements delineated in Generic

Letter 99-02. These changes will require that a sample of the charcoal adsorber be periodically obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and laboratory tested to determine the methyl iodide penetration in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity 70%. The acceptance criteria for methyl iodide penetration are also provided for each charcoal filter unit, which, as discussed in the next section, establishes limits consistent with the requirements of Generic Letter 99-02.

Previously, charcoal filter testing for the CREF and FRVS systems at Hope Creek had utilized the methodology of ASTM D3803-1979. However, Generic Letter 99-02 noted that ASTM D3803-1979 had unacceptable test parameter tolerances and instrument calibration requirements, and that it was non-conservative in not requiring humidity pre-equilibration of used charcoal. Additional deficiencies with the use of ASTM D3803-1979 for testing charcoal filters were also noted in Generic Letter 99-02. Therefore, Hope Creek is incorporating testing requirements that reflect ASTM D3803-1989 methodology for the performance of the aforementioned TS surveillance requirements.

JUSTIFICATION OF REQUESTED CHANGES:

The Hope Creek analyses of design-basis accidents assume particular charcoal filter adsorption efficiencies when calculating offsite and control room operator doses. To determine whether the filter adsorber efficiency is greater than that assumed in the design-basis accident analysis, periodic testing of charcoal filter samples are performed. The TS surveillance requirement acceptance criteria implement a safety factor to ensure that the efficiency assumed in the accident analysis is still valid at the end of the surveillance interval. The proposed TS acceptance criteria (shown in the table below) for the charcoal filter efficiency testing will continue to include this safety factor, which will be revised (to a safety factor of 2) to reflect the fact that, as stated in Generic Letter 99-02, ASTM D3803-1989 is a more accurate and demanding test than older tests. The NRC stated that this safety factor can be used for systems with or without humidity control because the lack of humidity control is already accounted for in the test conditions. Since the Hope Creek CREF and FRVS design utilizes safety-related heaters for humidity control, the ASTM D3803-1989 testing will be conducted at 70 percent RH. In addition, system face velocities for CREF and FRVS will be below 110% of 40 ft/min.

As stated in Generic Letter 99-02, testing in accordance with ASTM D3803-1989 adequately demonstrates the capability of the charcoal, and the NRC staff considers ASTM D3803-1989 to be the most accurate and most realistic protocol for testing

charcoal in ESF ventilation systems because it offers the greatest assurance of accurately and consistently determining the capability of the charcoal. For example, it requires the test to be performed at a constant low temperature of 30°C, it provides for smaller tolerances in temperature, humidity, and airflow; and it has a humidity pre-equilibration.

The table below lists the filter efficiency acceptance criteria that will be implemented with the proposed TS changes shown in Attachment 3 of this letter.

System	Current TS Acceptance Limit for methyl iodide removal efficiency.	Methyl iodide removal efficiency licensing basis assumption.	Proposed TS Acceptance Limit for methyl iodide removal efficiency (Safety Factor of 2 applied)..
FRVS Vent Unit	99.0%	95.0% (See NRC SER for Hope Creek TS Amendment No. 30).	97.5%
FRVS Recirc Unit	92.5%	80.0% (See NRC SER for Hope Creek TS Amendment No. 30).	90.0%
CREF	99.825%	99.0% (Original Licensing Basis).	99.5%

The iodine removal efficiencies assigned to CREF and FRVS, and utilized for the proposed TS acceptance criteria, have been reviewed and approved by the NRC. As stated in Section 6.5.1.1 of the NRC Safety Evaluation Report for Hope Creek (NUREG-1048), CREF has an assigned decontamination efficiency of 99% for accident elemental and organic iodines for the charcoal adsorber (four-inch deep bed). For FRVS, the NRC issued a Safety Evaluation Report, dated August 7, 1989, for Hope Creek TS Amendment No. 30, which evaluated changes made to the decontamination efficiencies assigned to the FRVS Recirculation and Ventilation subsystems. These changes established an 80% decontamination efficiency for the FRVS Recirculation units and a 95% decontamination efficiency for the FRVS Ventilation units, which provides an overall decontamination efficiency of 99% for the entire FRVS system. The NRC concluded that those changes were acceptable.

PSE&G believes that the proposed changes to the TS: 1) are consistent with the requirements delineated in Generic Letter 99-02; 2) implement testing methods that adequately demonstrate charcoal filter capability; and 3) establish acceptance criteria consistent with Hope Creek's licensing basis.

ENVIRONMENTAL IMPACT:

The proposed TS changes were reviewed against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, a significant increase in the amounts of effluents that may be released offsite, or a significant increase in the individual or cumulative occupational radiation exposures. Based on the foregoing, PSE&G concludes that the proposed TS changes meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

**HOPE CREEK GENERATING STATION
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REVISIONS TO THE TECHNICAL SPECIFICATIONS (TS)**

10CFR50.92 EVALUATION

Public Service Electric & Gas (PSE&G) has concluded that the proposed changes to the Hope Creek Generating Station (HC) Technical Specifications do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGE

The proposed changes affect TS Surveillance Requirements 4.6.5.3.1.c.2, 4.6.5.3.1.d, 4.6.5.3.2.c.2, 4.6.5.3.2.d, 4.7.2.c.2 and 4.7.2.d. The purpose of these changes is to implement Filtration, Recirculation and Ventilation System (FRVS) and Control Room Emergency Filtration (CREF) System charcoal filter testing requirements and acceptance criteria that are consistent with NRC requirements delineated in Generic Letter 99-02.

BASIS

1. *The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The proposed TS change does not involve any physical changes to plant structures, systems or components (SSC). The CREF and FRVS systems will continue to function as designed. The CREF and FRVS systems are designed to mitigate the consequences of an accident, and therefore, can not contribute to the initiation of any accident. The proposed TS surveillance requirement changes implement testing methods that more appropriately demonstrate charcoal filter capability and establish acceptance criteria, which ensure that Hope Creek's licensing and design basis assumptions are met. In addition, this proposed TS change will not increase the probability of occurrence of a malfunction of any plant equipment important to safety, since the manner in which the CREF and FRVS systems are operated is not affected by these proposed changes. The proposed surveillance requirement acceptance criteria ensure that the FRVS and CREF safety functions will be accomplished.

Therefore, the proposed TS changes would not result in the increase of the consequences of an accident previously evaluated, nor do they involve an increase in the probability of an accident previously evaluated.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed TS changes do not involve any physical changes to the design of any plant SSC. The design and operation of the CREF and FRVS systems are not changed from that currently described in Hope Creek's licensing basis. The CREF and FRVS systems will continue to function as designed to mitigate the consequences of an accident. Implementing the proposed charcoal filter testing methods and acceptance criteria does not result in plant operation in a configuration that would create a different type of malfunction to the CREF and FRVS systems than any previously evaluated. In addition, the proposed TS changes do not alter the conclusions described in Hope Creek's licensing basis regarding the safety related functions of these systems.

Therefore, the proposed TS change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. The proposed change does not involve a significant reduction in a margin of safety.

The proposed changes contained in this submittal would implement TS requirements that: 1) are consistent with the requirements delineated in Generic Letter 99-02; 2) implement testing methods that adequately demonstrate charcoal filter capability; and 3) establish acceptance criteria consistent with Hope Creek's licensing basis. The ability of CREF and FRVS to perform their safety functions is not adversely affected by these proposed changes. Therefore, the proposed TS change does not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSE&G has determined that the proposed changes do not involve a significant hazards consideration.

**HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354
REVISIONS TO THE TECHNICAL SPECIFICATIONS (TS)**

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. NPF-57 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
4.6.5.3.1.c.2	3/4 6-51a
4.6.5.3.1.d	3/4 6-51a
4.6.5.3.2.c.2	3/4 6-53
4.6.5.3.2.d	3/4 6-53
4.7.2.c.2	3/4 7-7
4.7.2.d	3/4 7-7

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months or upon determination** that the HEPA filters or charcoal adsorbent could have been damaged by structural maintenance or adversely affected by any chemicals, fumes or foreign materials (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 subsystem by:
1. Verifying that the subsystem satisfies the in-place penetration testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.b and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rates are 9,000 cfm \pm 10% for each FRVS ventilation unit.
 2. ~~Verifying within 31 days after removal from the FRVS ventilation units, 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, by showing a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ASTM D3803; and~~
 3. Verifying a subsystem flow rate of 9,000 cfm \pm 10% for each FRVS ventilation unit during system operation when tested in accordance with ANSI N510-1980.
- d. ~~After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the FRVS ventilation units, 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, by showing a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ASTM D3803.~~

INSERT

A →

INSERT B

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**This determination shall consider the maintenance performed and/or the type, quantity, length of contact time, known effects and previous accumulation history for all contaminants which could reduce the system performance to less than that verified by the acceptance criteria in items c.1 through c.3 below.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months or upon determination** that the HEPA filters or charcoal adsorbent could have been damaged by structural maintenance or adversely affected by any chemicals, fumes or foreign materials (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 subsystem by:

1. Verifying that the subsystem satisfies the in-place penetration testing acceptance criteria of less than 0.05% 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 rates are 30,000 cfm \pm 10% for each FRVS recirculation unit.

2. ~~Verifying within 31 days after removal from the FRVS recirculation units, 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 Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than 7.5% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ATM D3803; and~~

INSERT C
→

3. Verifying a subsystem flow rate of 30,000 cfm \pm 10% for each FRVS recirculation unit during system operation when tested in accordance with ANSI N510-1980.

d. ~~After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the FRVS recirculation units, 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, by showing a methyl iodide penetration of less than 7.5% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ASTM D3803.~~

INSERT D
→

**This determination shall consider the maintenance performed and/or the type, quantity, length of contact time, known effects and previous accumulation history for all contaminants which could reduce the system performance to less than that verified by the acceptance criteria in items c.1 through c.3 below.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

through the HEPA filters and charcoal adsorbers and verifying that the subsystem operates for at least 10 hours with the heaters on in order to reduce the buildup of moisture on the carbon adsorbers and HEPA filters.

- c. 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 subsystem filter train by:
 - 1. Verifying that the subsystem satisfies the in-place penetration testing acceptance criteria of less than 0.05% 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 filter train flow rate is 4000 cfm \pm 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, by showing a methyl iodide penetration of less than 0.175% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ASTM D3803 with a 4 inch bed; and~~
 - 3. Verifying a subsystem filter train flow rate of 4000 cfm \pm 10% during subsystem operation when tested in accordance with ANSI N510-1980.
- d. ~~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, by showing a methyl iodide penetration of less than 0.175% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ASTM D3803 with a 4 inch bed.~~
- e. 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 7.5 inches Water Gauge while operating the filter train subsystem at a flow rate of 4000 cfm \pm 10%.
 - 2. Verifying with the control room hand switch in the recirculation mode that on each of the below recirculation mode actuation test signals, the subsystem automatically switches to the isolation mode of operation and the isolation dampers close within 5 seconds:

INSERT

E →

INSERT

F →

INSERT A

Verifying within 31 days after removal from the FRVS ventilation units, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 2.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity 70%.

INSERT B

After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the FRVS ventilation units, that a laboratory analysis of a representative carbon sample, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows a methyl iodide penetration less than 2.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.

INSERT C

Verifying within 31 days after removal from the FRVS recirculation units, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 10.0% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity 70%.

INSERT D

After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the FRVS recirculation units, that a laboratory analysis of a representative carbon sample, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows a methyl iodide penetration less than 10.0% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.

INSERT E

Verifying within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity 70%.

INSERT F

After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the Control Room Emergency Filtration units, that a laboratory analysis of a representative carbon sample, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows a methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 70%.