Northeast
Nuclear Energy

Rope Ferry Rd. (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385-0128
(860) 447-1791
Fax (860) 444-4277

The Northeast Utilities System

NOV 29 1999

Docket No. 50-423
B17916

Re:10 CFR 50.90

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

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specifications
Response to Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal" and Preparation of Technical Specifications Change Request 3-12-99

Pursuant to 10 CFR 50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License NPF-49 by incorporating the attached proposed revisions to the Millstone Nuclear Power Station, Unit No. 3 (MP-3) Technical Specifications (TS) Sections 3/4.6.6 "Supplementary Leak Collection and Release System" (SLCRS), 3/4.7.7 "Control Room Emergency Ventilation System" (CREVS), 3/4.7.9 "Auxiliary Building Filter System" (ABFS), 3/4.9.12 "Fuel Building Exhaust System" (FBES) and associated Bases sections.

Description of Proposed Revision

The Nuclear Regulatory Commission (NRC) has determined that testing nuclear-grade activated charcoal to standards other than American Society for Testing 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. This NRC position is documented in Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal." Generic Letter 99-02 requires those facilities that do not reference ASTM D3803-1989 to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol. In this regard MP-3 has

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prepared the enclosed Technical Specifications Change Request (TSCR) which amends the MP-3 Technical Specifications to include reference to ASTM D3803-1989.

Considerations

The next performance test of MP-3 nuclear grade charcoal filter media is scheduled for December 7, 1999. While it is our intention to comply with the provisions of the Generic Letter with regards to the use of ASTM D3803-1989, this would directly conflict with the current requirement of the TS. Consequently, testing to both the current TS requirements and to those specified in the Generic Letter would be necessary in order to maintain compliance. We find this situation to be impractical as it would necessitate the replacement of the associated charcoal bed before the end of its useful life.

We note that within the Generic Letter the NRC indicates that enforcement discretion would be exercised for plants committing to test in accordance with the Generic Letter provisions and who submit the associated TS changes incorporating these requirements. NNECO believes that the information contained in this submittal meets the NRC criteria for the exercise of enforcement discretion, and hereby requests NRC acknowledgement to that end prior to December 7, 1999.

Markup of Proposed Revision

A copy of the marked up TS pages are contained in Attachment 1. The markup reflects the currently issued version of the TS. Pending TS Amendments are not reflected in the enclosed markup.

Retype of Proposed Revision

A copy of the retyped TS pages are presented in Attachment 2. The retyped pages reflect the incorporation of the proposed changes to the TS. The retyped pages reflect the currently issued version of the TS. Pending TS Amendments are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with recently issued TS amendments prior to issuance.

Background, Safety Summary, Significant Hazards Consideration and Environmental Considerations

The Background and Safety Summary, related to this TSCR is presented in Attachment 3. The Significant Hazards Consideration (SHC) and Environmental Considerations are presented in Attachment 4.

Response to the Requested Actions of Generic Letter 99-02

As required by Generic Letter 99-02 this TSCR contains the test temperature, relative humidity, penetration, and face velocity for those systems with face velocities exceeding 110% of 0.203 m/s (40 ft/min) at which testing will be performed. Attachment 5 summarizes the results of our Technical Evaluation M3-EV-97-0224, Rev. 4, "Charcoal (HECA) Depth, Velocity, Residence Time and Testing Protocol for MP-3 Filtration Units". This Technical Evaluation assessed the impact associated with implementing ASTM D3803-1989 verses the requirements of the current TS testing method. The basis for the selected TS values associated with testing of used nuclear-grade charcoal in accordance with the requirements of ASTM D3803-1989 are also presented in Attachment 5. Furthermore it is noted that purchase orders for nuclear-grade activated charcoal specify that this material be tested and comply with the appropriate requirements of ASTM D3803-1989. Technical Specifications required surveillance's which include laboratory testing of nuclear-grade activated charcoal are presently scheduled for December 7, 1999. This testing will be performed in accordance with the ASTM D3803-1989 as described in Generic Letter 99-02.

Plant Operations Review Committee and Nuclear Safety Assessment Board Review

Plant Operations Review Committee and Nuclear Safety Assessment Board have reviewed this proposed License Amendment change and concur with the conclusions presented in the rationale for the proposed change relative to safety.

State Notification

In accordance with 10 CFR 50.91(b), we are providing the state of Connecticut with a copy of this proposed amendment to ensure their awareness of this request.

Schedule Request for NRC Approval

NNECO requests NRC review and approval of this proposed revision, and that the license amendment be effective upon issuance. Furthermore NNECO requests that this proposed revision to the TS be implemented within 60 days of issuance.

There are no regulatory commitments contained within this letter.

If the NRC Staff should have any questions or comments regarding this submittal, please contact Mr. D. W. Dodson at (860) 447-1791, extension 2346.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Raymond P. Necci
Vice President - Nuclear Oversight and
Regulatory Affairs

Subscribed and sworn to before me

this 29 day of November, 1999

Donna Lynne Williams
Notary Public

Date Commission Expires: Nov 30, 2001

cc: H. J. Miller, Region I Administrator
J. A. Nakoski, NRC Senior Project Manager, Millstone Unit No. 3
A.C. Cerne, Senior Resident Inspector, Millstone Unit No. 3

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Docket No. 50-423
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Attachment 1

Millstone Nuclear Power Station, Unit No. 3

Proposed Revision to Technical Specifications
Response to Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal" and Preparation of Technical Specifications Change Request 3-12-99

Marked Up Pages

November 1999

Markup Of Proposed Revision

Refer to the attached markup of the proposed revision to the Technical Specifications. The attached markup reflects the currently issued version of the Technical Specifications listed below. Pending Technical Specification revisions are not reflected in the enclosed markup.

The following TS changes are included in the attached markup.

Technical Specifications, sections 3/4.6.6 "Supplementary Leak Collection and Release System" (SLCRS), 3/4.7.7 "Control Room Emergency Ventilation System" (CREVS), 3/4.7.9 "Auxiliary Building Filter System" (ABFS), 3/4.9.12 "Fuel Building Exhaust System" (FBES) and associated Bases sections are modified to reference ASTM D3803-1989 as per the requirements of Generic Letter 99-02.

Replace with Insert A

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,* for a methyl iodide penetration of less than 0.175%; and

3) Verifying a system flow rate of 7600 cfm to 9800 cfm during system operation when tested in accordance with ANSI N510-1980.

c. 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,* for a methyl iodide penetration of less than 0.175%:

d. At least once each REFUELING INTERVAL by: 123 (12/28/0.)

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.25 inches Water Gauge while operating the system at a flow rate of 7600 cfm to 9800 cfm,

2) Verifying that the system starts on a Safety Injection test signal, and

3) Verifying that the heaters dissipate 50 ±5 kW when tested in accordance with ANSI N510-1980. 126

Delete two of the asterisks

***ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once each REFUELING INTERVAL 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 system by:

1) Verifying that the system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revisions 2, March 1978,* and the system flow rate is 1,120 cfm ±20%;

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,* for a methyl iodide penetration of less than 0.175%; and

Replace with Insert E

3) Verifying a system flow rate of 1,120 cfm ±20% 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, 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,* for a methyl iodide penetration of less than 0.175%.

e. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.75 inches Water Gauge while operating the system at a flow rate of 1,120 cfm ±20%;

2) Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch Water Gauge at less than or equal to a pressurization flow of 230 cfm relative to adjacent areas during system operation; and

3) Verifying that the heaters dissipate 9.4 ±1 kW when tested in accordance with ANSI N510-1980.

PLANT SYSTEMS

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9 Two independent Auxiliary Building Filter Systems shall be OPERABLE with each system comprised of:

a. one OPERABLE filter and fan, and

b. one OPERATIONAL Charging Pump/Reactor Plant Component Cooling Water Pump Ventilation System.

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

ACTION:

With one Auxiliary Building Filter System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition, comply with the ACTION requirements of Specification 3.6.6.1.

SURVEILLANCE REQUIREMENTS

4.7.9 Each Auxiliary Building Filter System shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying a system flow rate of 30,000 cfm ±10% and that the system operates for at least 10 continuous hours with the heaters operating;

b. At least once each REFUELING INTERVAL 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 system by:

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage 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 rate is 30,000 cfm ±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~~

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

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testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978,* for a methyl iodide penetration of less than 0.175%; and

3) Verifying a system flow rate of 30,000 cfm ±10% during system operation when tested in accordance with ANSI N510-1980.

c. 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*, for a methyl iodide penetration of less than 0.175%.

d. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.8 inches Water Gauge while operating the system at a flow rate of 30,000 cfm ±10%,

2) Verifying that the system starts on a Safety Injection test signal, and

3) Verifying that the heaters dissipate 180 ±18 kW when tested in accordance with ANSI N510-1980.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 30,000 cfm ±10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 30,000 cfm ±10%.

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* ANSI N510-~~1980~~ 1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage 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 rate is 20,700 cfm ±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,* for a methyl iodide penetration of less than 0.175%; and

Replace with Insert A

3) Verifying a system flow rate of 20,700 cfm ±10% during system operation when tested in accordance with ANSI N510-1980.

c. 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,* for a methyl iodide penetration of less than 0.175%.

d. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.8 inches Water Gauge while operating the system at a flow rate of 20,700 cfm ±10%.

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

Surveillance Requirements

a

Cumulative operation of the SLCRS with heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The 31-day frequency was developed in consideration of the known reliability of fan motors and controls. This test is performed on a STAGGERED TEST BASIS once per 31-days.

b, c, e, and f

These surveillances verify that the required SLCRS filter testing is performed in accordance with Regulatory Guide 1.52, Revision 2. ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2. The surveillances include testing HEPA filter performance, charcoal adsorber efficiency, system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). The heater kW measured must be corrected to its nameplate rating. Variations in system voltage can lead to measurements of kW which cannot be compared to the nameplate rating because the output kW is proportional to the square of the voltage.

Add Insert B

d

The automatic startup ensures that each SLCRS train responds properly. The REFUELING INTERVAL frequency is based on the need to perform this surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance was performed with the reactor at power. The surveillance verifies that the SLCRS starts on a SIS test signal. It also includes the automatic functions to isolate the other ventilation systems that are not part of the safety-related postaccident operating configuration and to start up and to align the ventilation systems that flow through the secondary containment to the accident condition.

- The main steam valve building ventilation system isolates.
- Auxiliary building ventilation (normal) system isolates.
- Charging pump/reactor plant component cooling water pump area cooling subsystem aligns and discharges to the auxiliary building filters and a filter fan starts.
- Hydrogen recombiner ventilation system aligns to the postaccident configuration.
- The engineered safety features building ventilation system aligns to the postaccident configuration.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

4.7.7.c

The performance of the control room emergency filtration systems should be checked periodically by verifying the HEPA filter efficiency, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. The frequency is at least once per REFUELING INTERVAL 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 system.

ANSI N510-1980 will be used as a procedural guide for surveillance testing.

4.7.7.c.1

This surveillance verifies that the system satisfies the in-place penetration and bypass leakage testing acceptance criterion of less than 0.05% in accordance with Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the system at a flow rate of 1,120 cfm ± 20%. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in the regulatory guide.

4.7.7.c.2

This surveillance requires that a representative carbon sample be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978 and that a laboratory analysis verify that the representative carbon sample meets the criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978 (Ref. 1) and MP3 UFSAR, Table 1.8-1, NRC Regulatory Guide 1.52 (Ref. 2), for a methyl iodide penetration of less than 0.175%. The laboratory analysis is required to be performed within 31 days after removal of the sample. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in Revision 2 of Regulatory Guide 1.52.

Replace with Insert C

4.7.7.c.3

This surveillance verifies that a system flow rate of 1,120 cfm ± 20%, during system operation when testing in accordance with ANSI N510-1980.

4.7.7.d

After 720 hours of charcoal adsorber operation, a representative carbon sample must be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and a laboratory analysis must verify that the representative carbon sample meets the criteria of Regulatory position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

~~iodide penetration of less than 0.175%.~~ The laboratory analysis is required to be performed within 31 days after removal of the sample. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in Revision 2 of Regulatory Guide 1.52.

The maximum surveillance interval is 900 hours, per Surveillance Requirement 4.0.2. The 720 hours of operation requirement originates from Nuclear Regulatory Guide 1.52, Table 2, Note C. This testing ensures that the charcoal adsorbency capacity has not degraded below acceptable limits as well as providing trending data.

4.7.7.e.1

This surveillance verifies that the pressure drop across the combined HEPA filters and charcoal adsorbers banks at less than 6.75 inches water gauge when the system is operated at a flow rate of 1,120 cfm ± 20%. The frequency is at least once per REFUELING INTERVAL.

4.7.7.e.2

This surveillance verifies that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch water gauge at less than or equal to a pressurization flow of 230 cfm relative to adjacent areas during system operation. The frequency is at least once per REFUELING INTERVAL.

The intent of this surveillance is to verify the ability of the control room emergency air filtration system to maintain a positive pressure while running in the filtered pressurization mode.

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

The OPERABILITY of the Auxiliary Building Filter System ensures that radioactive materials leaking from the equipment within the charging pump, component cooling water pump and heat exchanger areas following a LOCA are filtered prior to reaching the environment. The charging pump/reactor plant component cooling water pump ventilation system must be operational to ensure operability of the auxiliary building filter system and the supplementary leak collection and release system. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. The heater kW measured must be corrected to its nameplate rating. Variations in system voltage can lead to measurements of kW which cannot be compared to the nameplate rating because the output kW is proportional to the square of the voltage.

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3/4.7.10 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. For the purpose of declaring the affected system OPERABLE with the inoperable snubber(s), an engineering evaluation may be performed, in accordance with Section 50.59 of 10 CFR Part 50.

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

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Operations Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g.,

3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

3/4.9.12 FUEL BUILDING EXHAUST FILTER SYSTEM

The limitations on the Fuel Building Exhaust Filter System ensure that all radioactive iodine released from an irradiated fuel assembly and storage pool water will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. The heater kW measured must be corrected to its nameplate rating. Variations in system voltage can lead to measurements of kW which cannot be compared to the nameplate rating because the output kW is proportional to the square of the voltage. The filtration system removes radioiodine following a fuel handing or heavy load drop accident. Noble gases would not be removed by the system. Other radionuclides would be scrubbed by the storage pool water. Iodine-131 has the longest half-life: ~8 days. After 60 days decay time, there is essentially negligible iodine and filtration is unnecessary.

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3/4.9.13 SPENT FUEL POOL - REACTIVITY

The limitations described by Figure 3.9-1 ensure that the reactivity of fuel assemblies introduced into Region II are conservatively within the assumptions of the safety analysis.

Administrative controls have been developed and instituted to verify that the enrichment and burn-up limits of Figure 3.9-1 have been maintained for the fuel assembly.

During normal Spent Fuel Pool operation, the spent fuel racks are capable of maintaining k_{eff} at less than 0.95 in an unborated water environment due to the geometry of the rack spacing and the presence of Boraflex neutron absorber in the spent fuel racks. Due to radiation induced embrittlement, there is a possibility that the Boraflex absorber could degrade following a seismic event. At least 1500 ppm boron in the Spent Fuel Pool is required in anticipation that a seismic event could cause a complete loss of all Boraflex. If, in addition to a loss of Boraflex, a single misplaced fuel assembly is postulated, then a minimum of 1750 ppm boron is required. The 1750 ppm boron concentration requirement bounds conditions for a loss of all Boraflex in the fuel racks.

The action requirements of this specification recognize the possibility of a seismic event which could degrade the Boraflex neutron absorber in the spent fuel racks. Seismic analysis has shown that there is a possibility that the Boraflex absorber could degrade following a seismic event greater in magnitude than an

INSERT A

shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F) and a relative humidity of 70%

INSERT B

Laboratory testing of methyl iodide penetration shall be performed in accordance with ASTM D3803-89 and Millstone Unit 3 specific parameters.

INSERT C

laboratory testing criteria of ASTM D3803-89 and Millstone Unit 3 specific parameters.

INSERT D

shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F), and a relative humidity of 70%, and a face velocity of 52 ft/min

INSERT E

shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F), and a relative humidity of 70%, and a face velocity of 54 ft/min

Docket No. 50-423
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Attachment 2

Millstone Nuclear Power Station, Unit No. 3

Proposed Revision to Technical Specifications
Response to Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal" and Preparation of Technical Specifications Change Request 3-12-99

Retyped Pages

November 1999

Retype of Proposed Revision

Refer to the attached retype of the proposed revision to the Technical Specifications (TS). The attached retype reflects the incorporation of the proposed changes to the TS. Pending TS revisions are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with recently issued TS prior to issuance.

SURVEILLANCE REQUIREMENTS (Continued)

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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F) and a relative humidity of 70%; and

3) Verifying a system flow rate of 7600 cfm to 9800 cfm during system operation when tested in accordance with ANSI N510-1980.

c. 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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F) and a relative humidity of 70%:

d. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.25 inches Water Gauge while operating the system at a flow rate of 7600 cfm to 9800 cfm,

2) Verifying that the system starts on a Safety Injection test signal, and

3) Verifying that the heaters dissipate 50 ±5 kW when tested in accordance with ANSI N510-1980.

*ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once each REFUELING INTERVAL 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 system by:

1) Verifying that the system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revisions 2, March 1978,* and the system flow rate is 1,120 cfm ±20%;

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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F), a relative humidity of 70%, and a face velocity of 54 ft/min; and

3) Verifying a system flow rate of 1,120 cfm ±20% 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, 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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F), and a relative humidity of 70%, and a face velocity of 54 ft/min.

e. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.75 inches Water Gauge while operating the system at a flow rate of 1,120 cfm ±20%;

2) Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch Water Gauge at less than or equal to a pressurization flow of 230 cfm relative to adjacent areas during system operation; and

3) Verifying that the heaters dissipate 9.4 ±1 kW when tested in accordance with ANSI N510-1980.

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9 Two independent Auxiliary Building Filter Systems shall be OPERABLE with each system comprised of:

a. one OPERABLE filter and fan, and

b. one OPERATIONAL Charging Pump/Reactor Plant Component Cooling Water Pump Ventilation System.

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

ACTION:

With one Auxiliary Building Filter System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition, comply with the ACTION requirements of Specification 3.6.6.1.

SURVEILLANCE REQUIREMENTS

4.7.9 Each Auxiliary Building Filter System shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying a system flow rate of 30,000 cfm ±10% and that the system operates for at least 10 continuous hours with the heaters operating;

b. At least once each REFUELING INTERVAL 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 system by:

   1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage 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 rate is 30,000 cfm ±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,* shows the methyl

iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F), a relative humidity of 70%, and a face velocity of 52 ft/min; and

3) Verifying a system flow rate of 30,000 cfm ±10% during system operation when tested in accordance with ANSI N510-1980.

c. 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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F), a relative humidity of 70%, and a face velocity of 52 ft/min;

d. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.8 inches Water Gauge while operating the system at a flow rate of 30,000 cfm ±10%,

2) Verifying that the system starts on a Safety Injection test signal, and

3) Verifying that the heaters dissipate 180 ±18 kW when tested in accordance with ANSI N510-1980.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 30,000 cfm ±10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 30,000 cfm ±10%.

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* ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2, March 1978.

SURVEILLANCE REQUIREMENTS (Continued)

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage 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 rate is 20,700 cfm ±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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F) and a relative humidity of 70%; and

3) Verifying a system flow rate of 20,700 cfm ±10% during system operation when tested in accordance with ANSI N510-1980.

c. 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,* shows the methyl iodide penetration less than or equal to 2.5% when tested in accordance with ASTM D3803-89 at a temperature of 30°C (86°F) and a relative humidity of 70%;

d. At least once each REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.8 inches Water Gauge while operating the system at a flow rate of 20,700 cfm ±10%.

3/4.6.6.1 SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (Continued)

Surveillance Requirements

a

Cumulative operation of the SLCRS with heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The 31-day frequency was developed in consideration of the known reliability of fan motors and controls. This test is performed on a STAGGERED TEST BASIS once per 31-days.

b, c, e, and f

These surveillances verify that the required SLCRS filter testing is performed in accordance with Regulatory Guide 1.52, Revision 2. ANSI N510-1980 shall be used in place of ANSI N510-1975 referenced in Regulatory Guide 1.52, Revision 2. Laboratory testing of methyl iodide penetration shall be performed in accordance with ASTM D3803-89 and Millstone Unit 3 specific parameters. The surveillances include testing HEPA filter performance, charcoal adsorber efficiency, system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). The heater kW measured must be corrected to its nameplate rating. Variations in system voltage can lead to measurements of kW which cannot be compared to the nameplate rating because the output kW is proportional to the square of the voltage.

d

The automatic startup ensures that each SLCRS train responds properly. The REFUELING INTERVAL frequency is based on the need to perform this surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance was performed with the reactor at power. The surveillance verifies that the SLCRS starts on a SIS test signal. It also includes the automatic functions to isolate the other ventilation systems that are not part of the safety-related postaccident operating configuration and to start up and to align the ventilation systems that flow through the secondary containment to the accident condition.

- The main steam valve building ventilation system isolates.
- Auxiliary building ventilation (normal) system isolates.
- Charging pump/reactor plant component cooling water pump area cooling subsystem aligns and discharges to the auxiliary building filters and a filter fan starts.
- Hydrogen recombiner ventilation system aligns to the postaccident configuration.
- The engineered safety features building ventilation system aligns to the postaccident configuration.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

4.7.7.c

The performance of the control room emergency filtration systems should be checked periodically by verifying the HEPA filter efficiency, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. The frequency is at least once per REFUELING INTERVAL 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 system.

ANSI N510-1980 will be used as a procedural guide for surveillance testing.

4.7.7.c.1

This surveillance verifies that the system satisfies the in-place penetration and bypass leakage testing acceptance criterion of less than 0.05% in accordance with Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the system at a flow rate of 1,120 cfm ± 20%. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in the regulatory guide.

4.7.7.c.2

This surveillance requires that a representative carbon sample be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978 and that a laboratory analysis verify that the representative carbon sample meets the laboratory testing criteria of ASTM D3803-89 and Millstone Unit 3 specific parameters. The laboratory analysis is required to be performed within 31 days after removal of the sample. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in Revision 2 of Regulatory Guide 1.52.

4.7.7.c.3

This surveillance verifies that a system flow rate of 1,120 cfm ± 20%, during system operation when testing in accordance with ANSI N510-1980.

4.7.7.d

After 720 hours of charcoal adsorber operation, a representative carbon sample must be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and a laboratory analysis must verify that the representative carbon sample meets the laboratory testing criteria of ASTM D3803-89 and Millstone Unit 3 specific parameters.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

The laboratory analysis is required to be performed within 31 days after removal of the sample. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in Revision 2 of Regulatory Guide 1.52.

The maximum surveillance interval is 900 hours, per Surveillance Requirement 4.0.2. The 720 hours of operation requirement originates from Nuclear Regulatory Guide 1.52, Table 2, Note C. This testing ensures that the charcoal adsorbency capacity has not degraded below acceptable limits as well as providing trending data.

4.7.7.e.1

This surveillance verifies that the pressure drop across the combined HEPA filters and charcoal adsorbers banks at less than 6.75 inches water gauge when the system is operated at a flow rate of 1,120 cfm ± 20%. The frequency is at least once per REFUELING INTERVAL.

4.7.7.e.2

This surveillance verifies that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch water gauge at less than or equal to a pressurization flow of 230 cfm relative to adjacent areas during system operation. The frequency is at least once per REFUELING INTERVAL.

The intent of this surveillance is to verify the ability of the control room emergency air filtration system to maintain a positive pressure while running in the filtered pressurization mode.

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

The OPERABILITY of the Auxiliary Building Filter System ensures that radioactive materials leaking from the equipment within the charging pump, component cooling water pump and heat exchanger areas following a LOCA are filtered prior to reaching the environment. The charging pump/reactor plant component cooling water pump ventilation system must be operational to ensure operability of the auxiliary building filter system and the supplementary leak collection and release system. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. Laboratory testing of methyl iodide penetration shall be performed in accordance with ASTM D3803-89 and Millstone Unit 3 specific parameters. The heater kW measured must be corrected to its nameplate rating. Variations in system voltage can lead to measurements of kW which cannot be compared to the nameplate rating because the output kW is proportional to the square of the voltage.

3/4.7.10 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. For the purpose of declaring the affected system OPERABLE with the inoperable snubber(s), an engineering evaluation may be performed, in accordance with Section 50.59 of 10 CFR Part 50.

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

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Operations Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g.,

3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

3/4.9.12 FUEL BUILDING EXHAUST FILTER SYSTEM

The limitations on the Fuel Building Exhaust Filter System ensure that all radioactive iodine released from an irradiated fuel assembly and storage pool water will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. Laboratory testing of methyl iodide penetration shall be performed in accordance with ASTM D3803-89 and Millstone Unit 3 specific parameters. The heater kW measured must be corrected to its nameplate rating. Variations in system voltage can lead to measurements of kW which cannot be compared to the nameplate rating because the output kW is proportional to the square of the voltage. The filtration system removes radioiodine following a fuel handing or heavy load drop accident. Noble gases would not be removed by the system. Other radionuclides would be scrubbed by the storage pool water. Iodine-131 has the longest half-life: ~8 days. After 60 days decay time, there is essentially negligible iodine and filtration is unnecessary.

3/4.9.13 SPENT FUEL POOL - REACTIVITY

The limitations described by Figure 3.9-1 ensure that the reactivity of fuel assemblies introduced into Region II are conservatively within the assumptions of the safety analysis.

Administrative controls have been developed and instituted to verify that the enrichment and burn-up limits of Figure 3.9-1 have been maintained for the fuel assembly.

During normal Spent Fuel Pool operation, the spent fuel racks are capable of maintaining k_{eff} at less than 0.95 in an unborated water environment due to the geometry of the rack spacing and the presence of Boraflex neutron absorber in the spent fuel racks. Due to radiation induced embrittlement, there is a possibility that the Boraflex absorber could degrade following a seismic event. At least 1500 ppm boron in the Spent Fuel Pool is required in anticipation that a seismic event could cause a complete loss of all Boraflex. If, in addition to a loss of Boraflex, a single misplaced fuel assembly is postulated, then a minimum of 1750 ppm boron is required. The 1750 ppm boron concentration requirement bounds conditions for a loss of all Boraflex in the fuel racks.

The action requirements of this specification recognize the possibility of a seismic event which could degrade the Boraflex neutron absorber in the spent fuel racks. Seismic analysis has shown that there is a possibility that the Boraflex absorber could degrade following a seismic event greater in magnitude than an

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Attachment 3

Millstone Nuclear Power Station, Unit No. 3

Proposed Revision to Technical Specifications
Response to Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal" and Preparation of Technical Specifications Change Request 3-12-99

Background and Safety Summary

November 1999

Background

Safety-related air-cleaning units used in the Engineered Safety Features (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 of a facility, most licensees have requirements in their facility TS to periodically test (in a laboratory) samples of charcoal taken from the air-cleaning units.

The NRC's and the nuclear industry's understandings of the appropriate laboratory tests for nuclear-grade charcoal have evolved over the years since the issuance of Regulatory Guide (RG) 1.52, "Design, Testing, and Maintenance Criteria for Postaccident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," which is referenced in the MP-3 Technical Specifications. The assumptions presented in RG 1.52 relative to this issue are that high-temperature/high-relative-humidity (RH) conditions are the most severe for performing appropriate laboratory testing of nuclear-grade charcoal. Later, with more testing experience, it became clear that the most conservative test is at low temperature/high humidity. The use of outdated test protocols or inappropriate test conditions can lead to an overestimation of the charcoal's ability to adsorb radioiodine following an accident. This issue prompted the NRC's issuance of Generic Letter 99-02 which requires licensee's to modify their TS to reflect testing of nuclear grade charcoal in accordance with the requirements of ASTM D3803-1989 or propose an acceptable alternative.

Safety Summary

This proposed TSCR implements the requirements of Generic Letter 99-02 with respect to amending the MP-3 Technical Specifications to incorporate reference to ASTM D3803-1989 for charcoal filter laboratory testing of ESF filtration systems. Generic Letter 99-02 presents the results of an evaluation by the NRC relative to using ASTM D3803-89 test methodology for performing laboratory testing of nuclear-grade activated charcoal and endorses it's use.

Technical Evaluation M3-EV-97-0224, Rev. 4, "Charcoal (HECA) Depth, Velocity, Residence Time and Testing Protocol for MP-3 Filtration Units" assessed the impact associated with implementing ASTM D3803-1989 against the testing protocol currently employed which is ASTM D3803-79. The results of this review concur with the conclusions presented in Generic Letter 99-02 in that ASTM D3803-89 is a more stringent testing standard because it does not differentiate between used and new charcoal, it has a longer equilibration period which is performed at a temperature of 30°C and a relative humidity (RH) of 95% (or 70% with humidity control), and finally it has more stringent tolerances that improve repeatability of the test. Based upon the

results of the preceding evaluation ASTM D3803-89 represents a more conservative testing standard for performing laboratory testing of nuclear-grade activated charcoal.

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Attachment 4

Millstone Nuclear Power Station, Unit No. 3

Proposed Revision to Technical Specifications
Response to Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal" and Preparation of Technical Specifications Change Request 3-12-99

Significant Hazards Consideration and Environmental Considerations

November 1999

Significant Hazards Consideration

NNECO has reviewed the proposed revision in accordance with 10 CFR 50.92 and has concluded that the revision does not involve any Significant Hazards Consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not satisfied. The proposed TS revision does not involve an SHC because the revision would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change modifies the TS to reference ASTM D3803-89 for performing laboratory testing of nuclear-grade charcoal in ESF filtration systems. The testing methodology associated with ASTM D3803-89 provides more stringent requirements than what is currently employed. These more stringent requirements, along with a factor of safety of greater than or equal to two in regards to the charcoal efficiency assumed in the design bases dose analysis will not result in operations that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. There are no related modifications to any systems. The proposed change does not affect procedures governing plant operations. Therefore there is no significant increase in the probability of occurrence of a previously evaluated accident.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change modifies the TS to reference ASTM D3803-89 for performing laboratory testing of nuclear-grade charcoal in ESF filtration Systems. The proposed change does not involve the physical alteration of the plant (no new or different type of equipment will be installed) or changes in the methods governing normal plant operation. This change does impose different more conservative testing requirements on the ESF filtration system charcoal samples. However there is no alteration in the methods employed to obtain the charcoal sample and testing is performed offsite. These changes are consistent with the safety analyses and licensing basis. Furthermore, the proposed changes do not introduce any new modes of plant operation, or alter any operational setpoints. Thus the possibility of a new or different kind of accident from any previously evaluated is not created.

3. Involve a significant reduction in the margin of safety.

   The proposed change modifies the TS to reference ASTM D3803-89 for performing laboratory testing of nuclear-grade charcoal in ESF filtration systems. The imposition of the more conservative charcoal filter testing requirements associated with ASTM D3803-89 along with a factor of safety of greater than or equal to two, in regards to the charcoal efficiency assumed in the design bases dose analysis has no impact on, nor decreases the margin of plant safety. The conservative nature of ASTM D3803-89 is by definition, providing additional restrictions to enhance plant safety. This change maintains requirements within the safety analysis and licensing basis. Therefore, there will be no significant reduction in the margin of safety as defined in the Bases for the TS affected by the proposed change.

As described above this TSCR does not impact the probability of an accident previously evaluated, does not involve a significant increase in the consequences of an accident previously evaluated, does not create the possibility of a new or different kind of accident from any accident previously evaluated, and does not result in a significant reduction in a margin of safety. Therefore, NNECO has concluded that the proposed changes do not involve an SHC.

Environmental Considerations

NNECO has reviewed the proposed license amendment against the criteria of 10 CFR 51.22 for environmental considerations. The proposed revision does not involve a Significant Hazards Consideration, does not significantly increase the type and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, NNECO concludes that the proposed revision meets the criteria delineated in 10 CFR 51.22(c)(9) for categorical exclusion from the requirements for environmental review.

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Attachment 5

Millstone Nuclear Power Station, Unit No. 3

Proposed Revision to Technical Specifications
Response to Generic Letter 99-02 "Laboratory Testing of Nuclear-Grade Activated Charcoal" and Preparation of Technical Specifications Change Request 3-12-99

Technical Specifications Values and Supporting Basis for Testing
Used Nuclear-Grade Activated Charcoal In Accordance With ASTM D3803-1989

November 1999

Attachment 5
Technical Specifications Values and Supporting Basis for Testing Used Nuclear-Grade Activated Charcoal In Accordance With ASTM D3803-1989

Unit	System	Charcoal Thickness (Note 1)	Velocity (Note 2)	Temperature (°C) (Note 3)	Relative Humidity (%) (Note 3)	Penetration Acceptance Criteria for Methyl Iodide (Equal or less than) (Note 4)
3HVC*FLT1A/1B	Control Bldg.	4 inches	54 fpm (16.46 m/min)	30	70	2.5%
3HVR*FLT1A/1B	Auxiliary Bldg.	4 inches	52 fpm (15.85 m/min)	30	70	2.5%
3HVR*FLT2A/2B	Fuel Bldg.	4 inches	40 fpm (12.2 m/min)	30	70	2.5%
3HVR*FLT3A/3B	SLCRS	4 inches	40 fpm (12.2 m/min)	30	70	2.5%

Notes:

1. Verified by review of vendor drawings, design specifications and prior walkdowns.
2. The velocities are based on the greater of the individual system upper Technical Specifications air flow limit (cfm) or 12.2 m/min (40 fpm) from ASTM D3803-89.
3. Relative humidity and temperature are based upon requirements of ASTM D3803-1989.
4. Penetration Acceptance Criteria for Methyl Iodide is based upon the following equation:

$$\text{Allowable Penetration} = \frac{(100\% - \text{Methyl Iodide efficiency for charcoal credited in accident analysis, } 95\%)}{\text{Safety Factor}}$$

$$\text{Allowable Penetration} = \frac{100\% - 95\%}{2} = \frac{5\%}{2} = 2.5\%$$