

October 4, 2000

Mr. S. E. Scace - Director
Nuclear Oversight and Regulatory Affairs
c/o Mr. David A. Smith
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385-0128

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3 - ISSUANCE OF
AMENDMENT RE: LABORATORY TESTING OF NUCLEAR-GRADE
ACTIVATED CHARCOAL (TAC NO. MA7231)

Dear Mr. Scace:

The Commission has issued the enclosed Amendment No. 184 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3 in response to your application dated November 29, 1999, as supplemented by letter dated May 2, 2000.

The proposed amendment would change Technical Specification (TS) 3/4.6.6, "Supplementary Leak Collection and Release System"; TS 3/4.7.7, "Control Room Emergency Ventilation System"; TS 3/4.7.9, "Auxiliary Building Filter System"; and TS 3/4.9.12, "Fuel Building Exhaust System"; in response to Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal." The requested changes require testing of nuclear-grade activated charcoal to be conducted in accordance with American Society for Testing Materials D3803-1989, "Standard Test Method for Nuclear-Grade Activated Charcoal," as recommended by GL 99-02.

The staff has completed its review of your application, and a copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Victor Nerses, Sr. Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 184 NPF-49
2. Safety Evaluation

cc w/encls: See next page

Mr. S. E. Scace - Director
Nuclear Oversight and Regulatory Affairs
c/o Mr. David A. Smith
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385-0128

October 4, 2000

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3 - ISSUANCE OF
AMENDMENT RE: LABORATORY TESTING OF NUCLEAR-GRADE
ACTIVATED CHARCOAL (TAC NO. MA7231)

Dear Mr. Scace:

The Commission has issued the enclosed Amendment No. 184 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3 in response to your application dated November 29, 1999, as supplemented by letter dated May 2, 2000.

The proposed amendment would change Technical Specification (TS) 3/4.6.6, "Supplementary Leak Collection and Release System"; TS 3/4.7.7, "Control Room Emergency Ventilation System"; TS 3/4.7.9, "Auxiliary Building Filter System"; and TS 3/4.9.12, "Fuel Building Exhaust System"; in response to Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal." The requested changes require testing of nuclear-grade activated charcoal to be conducted in accordance with American Society for Testing Materials D3803-1989, "Standard Test Method for Nuclear-Grade Activated Charcoal", as recommended by GL 99-02.

The staff has completed its review of your application, and a copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Victor Nerses, Sr. Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 184 NPF-49
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	W.Beckner
PDI-2 R/F	J.Segala
V.Nerses	ACRS
J.Clifford	J.Linville/R.Urban, RI
T.Clark	G.Hill (2)
OGC	E.Adensam

Accession Number: ML003744970

*See previous concurrence

OFFICE	PDI-2/PM	PDI-2/LA	SPLB/BC*	OGC*	PDI-2/SC
NAME	VNerses	TClark	JHannon	JEuchner	BBuckley for JClifford
DATE	9/20/00	9/20/00	9/1/00	9/11/00	10/3/00

OFFICIAL RECORD COPY

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 184
License No. NPF-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northeast Nuclear Energy Company, et al. (the licensee) dated November 29, 1999, as supplemented by letter dated May 2, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 184 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance, and shall be implemented within 90 days following completion of initial testing of the affected filters.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: October 4, 2000

Millstone Nuclear Power Station
Unit 3

cc:

Ms. L. M. Cuoco
Senior Nuclear Counsel
Northeast Utilities Service Company
P. O. Box 270
Hartford, CT 06141-0270

Edward L. Wilds, Jr., Ph.D.
Director, Division of Radiation
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

First Selectmen
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

Mr. M. H. Brothers
Vice President - Nuclear Operations
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Mr. M. R. Scully, Executive Director
Connecticut Municipal Electric
Energy Cooperative
30 Stott Avenue
Norwich, CT 06360

Mr. J. T. Carlin
Vice President - Human Services - Nuclear
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Mr. F. C. Rothen
Vice President - Nuclear Work Services
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Ernest C. Hadley, Esquire
1040 B Main Street
P.O. Box 549
West Wareham, MA 02576

Ms. Cynthia Arcate, Vice President
Generation Investments
New England Power Company
25 Research Drive
Westborough, MA 01582

Deborah Katz, President
Citizens Awareness Network
P.O. Box 83
Shelburne Falls, MA 03170

Mr. Allan Johanson, Assistant Director
Office of Policy and Management
Policy Development & Planning Division
450 Capitol Avenue - MS# 52ERN
P. O. Box 341441
Hartford, CT 06134-1441

Ms. Terry Concannon
Co-Chair
Nuclear Energy Advisory Council
41 South Buckboard Lane
Marlborough, CT 06447

Mr. R. P. Necci
Vice President - Nuclear Technical Services
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Millstone Nuclear Power Station
Unit 3

cc:

Mr. Evan W. Woollacott
Co-Chair
Nuclear Energy Advisory Council
128 Terry's Plain Road
Simsbury, CT 06070

Mr. John W. Beck, President
Little Harbor Consultants, Inc.
Millstone - ITPOP Project Office
P.O. Box 0630
Niantic, CT 06357-0630

Mr. L. J. Olivier
Senior Vice President and
Chief Nuclear Officer - Millstone
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Mr. C. J. Schwarz
Station Director
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Senior Resident Inspector
Millstone Nuclear Power Station
c/o U.S. Nuclear Regulatory Commission
P. O. Box 513
Niantic, CT 06357

Nicholas J. Scobbo, Jr., Esquire
Ferriter, Scobbo, Caruso, & Rodophele, P.C.
75 State Street, 7th Floor
Boston, MA 02108-1807

Mr. G. D. Hicks
Director - Nuclear Training Services
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Citizens Regulatory Commission
ATTN: Ms. Geri Winslow
P. O. Box 199
Waterford, CT 06385

Mr. William D. Meinert
Nuclear Engineer
Massachusetts Municipal Wholesale
Electric Company
P.O. Box 426
Ludlow, MA 01056

Mr. B. D. Kenyon
President and Chief Executive Officer-
NNECO
Northeast Nuclear Energy Company
P.O. Box 270
Hartford, CT 06141-0270

Mr. D. A. Smith
Manager - Regulatory Affairs
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Ms. Nancy Burton
147 Cross Highway
Redding Ridge, CT 00870

ATTACHMENT TO LICENSE AMENDMENT NO. 184

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following pages of the Appendix A Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

Insert

3/4 6-20

3/4 6-20

3/4 7-16

3/4 7-16

3/4 7/20

3/4 7-20

3/4 7-21

3/4 7-21

3/4 9-14

3/4 9-14

B 3/4 6-6

B 3/4 6-6

B 3/4 7- 14

B 3/4 7-14

B 3/4 7- 15

B 3/4 7-15

B 3/4 7-23

B 7-23

B 3/4 9-8

B 3/4 9-8

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 184

TO FACILITY OPERATING LICENSE NO. NPF-49

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated November 29, 1999, as supplemented May 2, 2000, the licensee (Northeast Nuclear Energy Company) of Millstone Nuclear Power Station, Unit No. 3 (MNPS3) requested an amendment to Facility Operating License No. NPF-49. The proposed amendment would change Technical Specification (TS) 3/4.6.6, "Supplementary Leak Collection and Release System"; TS 3/4.7.7, "Control Room Emergency Ventilation System"; TS 3/4.7.9, "Auxiliary Building Filter System"; and TS 3/4.9.12, "Fuel Building Exhaust System"; in response to Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal." The requested changes require testing of nuclear-grade activated charcoal to be conducted in accordance with American Society for Testing Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Charcoal," as recommended by GL 99-02. The letter dated May 2, 2000, provided clarifying information and did not change the staff's initial proposed no significant hazards consideration determination or expand the scope of the application as published in the *Federal Register*.

2.0 EVALUATION

The Nuclear Regulatory Commission (NRC) staff, with technical assistance from Brookhaven National Laboratory (BNL), has reviewed the licensee's submittals. In addition, the staff has reviewed the attached BNL Technical Evaluation Report (TER) regarding the proposed TS changes for MNPS3. Based on its review, the staff adopts the TER. In view of the above, and because the NRC staff considers ASTM D3803-1989 to be the most accurate and most realistic protocol for testing charcoal in safety-related ventilation systems, the NRC staff finds that the proposed TS changes are acceptable.

The NRC received a letter from ASTM in response to a March 8, 2000, *Federal Register* notice (65 FR 12286) related to revising testing standards in accordance with ASTM D3803-1989 for laboratory testing of activated charcoal in response to GL 99-02. ASTM notified the NRC that the 1989 standard is out of date and should be replaced by

D3803-1991 (1998). The staff acknowledges that the most current version of ASTM D3803 is ASTM D3803-1991 (reaffirmed in 1998). However, it was decided, for consistency purposes, to have all of the nuclear reactors test to the same standard (ASTM D3803-1989) because, prior to GL 99-02 being issued, approximately one third of nuclear reactors had technical specifications that referenced ASTM D3803-1989 and there are no substantive changes between the 1989 and 1998 versions.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change the surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (65 FR 4287). Accordingly, the amendments 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 need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Attachment: Technical Evaluation Report, Brookhaven National Laboratory

Principal Contributor: J. Segala

Date: October 4, 2000

TECHNICAL EVALUATION REPORT
BROOKHAVEN NATIONAL LABORATORY
FOR THE OFFICE OF NUCLEAR REACTOR REGULATION
DIVISION OF SYSTEMS SAFETY AND ANALYSIS
PLANT SYSTEMS BRANCH
RELATED TO AMENDMENT TO FACILITY OPERATING LICENSE NO. NPF-49
NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE NUCLEAR POWER STATION UNIT No.3
DOCKET NO. 50 - 423

1.0 INTRODUCTION

By letter dated November 29, 1999 (B17916), Northeast Nuclear Energy Company (NNECO) submitted its response to the actions requested in Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, for the Millstone Nuclear Power Station Unit No.3. By the same letter dated November 29, 1999, NNECO requested changes to the Technical Specifications (TS) Sections 3/4.6.6, 3/4.7.7, 3/4.7.9, and 3/4.9.12, covering the Supplementary Leak Collection and Release System (SLCRS), the Control Room Emergency Ventilation System (CREVS), the Auxiliary Building Filter System (ABFS), and the Fuel Building Exhaust System (FBES), respectively, for the Millstone Nuclear Power Station Unit No.3. The proposed changes would revise the TS surveillance testing of the safety related ventilation system charcoal to meet the requested actions of GL 99-02.

2.0 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 filtering radioiodine. Analyses of design basis accidents assume particular safety related charcoal adsorption efficiencies when calculating offsite and control room operator doses. 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, licensees have requirements in their TS to periodically perform a laboratory test (in accordance with a test standard) of charcoal samples taken from these ventilation systems.

In GL 99-02, the staff alerted licensees 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 their current licensing bases with respect 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.

GL 99-02 requested that all licensees determine whether their TS reference ASTM D3803-1989 for charcoal filter laboratory testing. Licensees whose TS do not reference ASTM D3803-1989 were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol.

3.0 EVALUATION

3.1 Laboratory Charcoal Sample Testing Surveillance Requirements

The current and proposed TS surveillance requirements for laboratory charcoal sample testing for the Supplementary Leak Collection and Release System (SLCRS), the Control Room Emergency Ventilation System (CREVS), the Auxiliary Building Filter System (ABFS), and the Fuel Building Exhaust System (FBES) are shown in Table 1 and Table 2, respectively.

The proposed use of ASTM D3803-1989 is acceptable because it provides accurate and reproducible test results. The proposed test temperature of 30 °C for all four systems is acceptable because it is consistent with ASTM D3803-1989. The proposed test relative humidity (RH) of 70 percent is also acceptable, because all four systems are equipped with safety-related heaters to maintain the RH at less than or equal to 70 percent during accident conditions. This is consistent with the actions requested in GL 99-02.

The credited removal efficiency for radioactive organic iodine for all four systems is 95 %. The proposed test penetration for radioactive methyl iodide for all four systems is less than 2.5 %. The proposed test penetration was obtained by applying a safety factor of 2 to the credited efficiency. The proposed safety factor of 2 for both systems is acceptable because it ensures that the efficiency credited in the accident analysis is still valid at the end of the surveillance interval. This is consistent with the minimum safety factor of 2 specified in GL 99-02.

NNECO stated in the November 29, 1999 letter that the face velocities of 40 fpm for both the SCLRS and FBES, 54 fpm for the CREVS, and 52 fpm for the ABFS are based on the greater of the individual system upper TS air flow limits (cfm) or 12.2 m/min (40 fpm) from ASTM D3803-1989. Therefore, the system face velocity at the charcoal adsorber sections for the SLCRS and FBES will not exceed 44 fpm (110% of 40 fpm) at the maximum system flow rates specified in the TS. This is acceptable because it ensures that the testing will be consistent with the operation of the ventilation system during accident conditions. Therefore, it is not necessary to specify the face velocities in the proposed TS change for the SCLRS and FBES. Since the face velocities of 54 fpm for the CREVS and 52 fpm for the ABFS are greater than 110 percent of 40 fpm, those face velocities are specified in the proposed TS. This is consistent with the August 23, 1999 errata to GL 99-02.

4.0 CONCLUSION

On the basis of its evaluation, BNL recommends that the NRC staff consider the proposed TS changes to be acceptable.

Principal Contributors: Richard E. Deem and Anthony Fresco

MILLSTONE NUCLEAR POWER STATION UNIT No.3

TABLE 1 - CURRENT TS REQUIREMENTS											
System Description						Current TS Requirements					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (% organic iodine)	Test Penetration (% methyl iodide)	Safety Factor	Test Standard	Test Temp (° C)	Test RH	Test Face Velocity (fpm)
			Res. Time (sec)	Face Velocity (fpm)							
3/4.6.6	Supplement-ary Leak Collection and Release System (SLCRS)	4	Not stated (0.51)*	Not stated (40)*	Not stated (95)**	<0.175	Not stated (28.6)**	Reg. Guide 1.52, Rev.2 ANSI N510-1980	Not stated (80)***	Not stated (70)***	Not stated (40)*
3/4.7.7	Control Room Emergency Ventilation System (CREVS)	4	Not stated (0.37)*	Not stated (54)*	Not stated (95)**	<0.175	Not stated (28.6)**	Reg. Guide 1.52, Rev.2 ANSI N510-1980	Not stated (80)***	Not stated (70)***	Not stated (54)*
3/4.7.9	Auxiliary Building Filter System (ABFS)	4	Not stated (0.39)*	Not stated (52)*	Not stated (95)**	<0.175	Not stated (28.6)**	Reg. Guide 1.52, Rev.2 ANSI N510-1980	Not stated (80)***	Not stated (70)***	Not stated (52)*
3/4.9.1 2	Fuel Building Exhaust System (FBES)	4	Not stated (0.57)*	Not stated (40)*	Not stated (95)**	<0.175	Not stated (28.6)**	Reg. Guide 1.52, Rev.2 ANSI N510-1980	Not stated (80)***	Not stated (70)***	Not stated (40)*

* The residence times are based on information received from NNECO during a telephone call on May 24, 2000. NNECO also stated that there was no change in the face velocities as compared to the values given for the proposed face velocities in Attachment 5 of the November 29, 1999 letter. The test face velocities are 40 fpm except for the CREVS at 54 fpm and the ABFS at 52 fpm.

** Current credited efficiencies are based on FSAR Tables 15.6-9 and 15.6-12 and Sections 15.6 and 15.7. The safety factors are calculated based on the credited efficiencies and the stated test penetrations. With regard to the credited efficiency for the SLCRS, the efficiency value does not appear to be stated explicitly in FSAR Tables 15.6-9 and 15.6-12 and Sections 15.6 and 15.7. The credited filter efficiency of 95% for both elemental iodine and for methyl iodine, as stated in Table 15.6-9 for post-LOCA and in Table 15.6-12 for a fuel handling accident (FHA), is considered to apply to all three systems, including the SLCRS.

*** The current test temperature of 80°C is the standard test temperature specified by ANSI N510-1980. NNECO indicated during the May 24, 2000 telephone call that although the relative humidity is not specified in the current TS, since heater surveillance tests are performed currently, laboratory testing of the charcoal is performed at 70% RH as allowed by Reg. Guide 1.52, Rev.2, March 1978.

MILLSTONE NUCLEAR POWER STATION UNIT No.3

TABLE 2 - PROPOSED TS REQUIREMENTS											
System Description						Proposed TS Requirements					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (methyl iodide)	Test Penetration (methyl iodide)	Safety Factor	Test Standard	Test Temp (° C)	Test RH	Test Face Velocity (fpm)
			Res. Time (sec)	Face Velocity (fpm)							
3/4.6.6	Supplement-ary Leak Collection and Release System (SLCRS)	4	Not stated (0.51)*	40	95%	<2.5%	2	ASTM D3803-1989	30	70%	40
3/4.7.7	Control Room Emergency Ventilation System (CREVS)	4	Not stated (0.37)*	54	95%	<2.5%	2	ASTM D3803-1989	30	70%	54
3/4.7.9	Auxiliary Building Filter System (ABFS)	4	Not stated (0.39)*	52	95%	<2.5%	2	ASTM D3803-1989	30	70%	52
3/4.9.1 2	Fuel Building Exhaust System (FBES)	4	Not stated (0.57)*	40	95%	<2.5%	2	ASTM D3803-1989	30	70%	40

* The residence times are based on information received from the licensee during a telephone call on May 24, 2000.