

September 29, 2000

Mr. L. W. Myers
Senior Vice President
Beaver Valley Power Station
Post Office Box 4
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 - ISSUANCE OF
AMENDMENT RE: REVISED STANDARDS FOR CHARCOAL FILTER TESTING
(TAC NOS. MA6758 AND MA6759)

Dear Mr. Myers:

The Commission has issued the enclosed Amendment No. 234 to Facility Operating License No. DPR-66 and Amendment No. 117 to Facility Operating License No. NPF-73 for the Beaver Valley Power Station, Unit Nos. 1 and 2 (BVPS-1 and 2). These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated September 20, 1999, as supplemented by letter dated May 12, 2000, which submitted License Amendment Requests Nos. 263 and 138.

These amendments revise the standard to which the control room ventilation charcoal and Supplementary Leak Collection and Release System (SLCRS) charcoal must be tested to follow American Society for Testing and Materials D3803-1989 for each BVPS Unit. The amendments also: (1) revise the minimum amount of output in kilowatts needed for the control room emergency ventilation system heaters at each BVPS Unit; (2) revise BVPS-1 SLCRS surveillance testing criteria to be consistent with American National Standards Institute/American Society of Mechanical Engineers N510-1980, the BVPS-1 control room ventilation testing, and the BVPS-2 SLCRS control room ventilation testing; and (3) make three minor typographical corrections.

In addition to the above changes, a correction of an error that was inadvertently introduced into the BVPS-1 surveillance requirement (SR) 4.7.8.1.b.2 with Amendment No. 56 is incorporated in the newly issued TS pages. Specifically, Amendment No. 56 inadvertently changed the SR from, "Verifying that the HEPA filter banks remove \geq 99% of ..." to "Verifying that the HEPA filter banks remove 99% of" Amendment 56 for BVPS-1 did not evaluate or approve this change as it is in a portion of the SR other than the area of change addressed by that amendment; that amendment only addressed changes to SR 4.7.8.1.b.3. The newly issued BVPS-1 TS page 3/4 7-20 corrects this error. Finally, the format of the TS pages issued with these amendments are consistent with the application

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Daniel S. Collins, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosures: 1. Amendment No. 234 to DPR-66
2. Amendment No. 117 to NPF-73
3. Safety Evaluation

cc w/encls: See next page

In addition to the above changes, a correction of an error that was inadvertently introduced into the BVPS-1 surveillance requirement (SR) 4.7.8.1.b.2 with Amendment No. 56 is incorporated in the newly issued TS pages. Specifically, Amendment No. 56 inadvertently changed the SR from, "Verifying that the HEPA filter banks remove ≥ 99% of ..." to "Verifying that the HEPA filter banks remove 99% of" Amendment 56 for BVPS-1 did not evaluate or approve this change as it is in a portion of the SR other than the area of change addressed by that amendment; that amendment only addressed changes to SR 4.7.8.1.b.3. The newly issued BVPS-1 TS page 3/4 7-20 corrects this error. Finally, the format of the TS pages issued with these amendments are consistent with the application.

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Daniel S. Collins, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

- Enclosures: 1. Amendment No. 234 to DPR-66
- 2. Amendment No. 117 to NPF-73
- 3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	MO'Brien	ACRS	Eadensam	OGC
PDI-1 Reading	DCollins	WBeckner	Mgamberoni	GHill (4)
JHannon	JSegala	EWeiss	MOpredenk,	RGN-I
RBarrett	MReinhart	MHart		

DOCUMENT NAME: ML003744014

*See Previous Concurrence

OFFICE	PDI-1/PM	E	PDI-1/LA	SPLB*	SPSB*	OGC*	PDI-1/SC
NAME	DCollins		MO'Brien	JHannon	RBarrett	SHom	MGamberoni
DATE	9/27/00		9/27/00	09/01/00	08/31/00	9/19/00	9/28/00

Beaver Valley Power Station, Units 1 and 2

Mary O'Reilly, Attorney
FirstEnergy Nuclear Operating Company
FirstEnergy Corporation
76 South Main Street
Akron, OH 44308

FirstEnergy Nuclear Operating Company
Licensing Section
Thomas S. Cosgrove, Manager (2 Copies)
Beaver Valley Power Station
Post Office Box, BV-A
Shippingport, PA 15077

Commissioner Roy M. Smith
West Virginia Department of Labor
Building 3, Room 319
Capitol Complex
Charleston, WV 25305

Director, Utilities Department
Public Utilities Commission
180 East Broad Street
Columbus, OH 43266-0573

Director, Pennsylvania Emergency
Management Agency
Post Office Box 3321
Harrisburg, PA 17105-3321

Ohio EPA-DERR
ATTN: Zack A. Clayton
Post Office Box 1049
Columbus, OH 43266-0149

Dr. Judith Johnsrud
National Energy Committee
Sierra Club
433 Orlando Avenue
State College, PA 16803

FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Mr. J. J. Maracek
Post Office Box 4, BV-A
Shippingport, PA 15077

FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
ATTN: Kevin L. Ostrowski,
Plant General Manager (BV-SOSB-7)
Post Office Box 4
Shippingport, PA 15077

Bureau of Radiation Protection
Pennsylvania Department of
Environmental Protection
ATTN: Larry Ryan
Post Office Box 2063
Harrisburg, PA 17120

Mayor of the Borough of
Shippingport
Post Office Box 3
Shippingport, PA 15077

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

Resident Inspector
U.S. Nuclear Regulatory Commission
Post Office Box 298
Shippingport, PA 15077

FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
ATTN: M. P. Pearson, Director Plant
Services (BV-NCD-3)
Post Office Box 4
Shippingport, PA 15077

Mr. J. A. Hultz, Manager
Projects & Support Services
FirstEnergy
76 South Main Street
Akron, OH 44308

PENNSYLVANIA POWER COMPANY

OHIO EDISON COMPANY

FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-334

BEAVER VALLEY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 234
License No. DPR-66

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by FirstEnergy Nuclear Operating Company, et al. (the licensee) dated September 20, 1999, as supplemented May 12, 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. DPR-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 234, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Marsha Gamberoni, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: September 29, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 234

FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Replace the following pages of 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

3/4 7-17
3/4 7-18
3/4 7-18a
3/4 7-18b
3/4 7-19
3/4 7-20
3/4 7-21

Insert

3/4 7-17
3/4 7-18
3/4 7-18a
3/4 7-18b
3/4 7-19
3/4 7-20
3/4 7-21

PENNSYLVANIA POWER COMPANY
OHIO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY
FIRSTENERGY NUCLEAR OPERATING COMPANY
DOCKET NO. 50-412
BEAVER VALLEY POWER STATION, UNIT 2
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 117
License No. NPF-73

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by FirstEnergy Nuclear Operating Company, et al. (the licensee) dated September 20, 1999, as supplemented May 12, 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-73 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 117 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. FENOC 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 its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Marsha Gamberoni, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: September 29, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 117

FACILITY OPERATING LICENSE NO. NPF-73

DOCKET NO. 50-412

Replace the following pages of 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

3/4 7-16

3/4 7-17

3/4 7-18

3/4 7-19

Insert

3/4 7-16

3/4 7-17

3/4 7-18

3/4 7-19

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENTS NOS. 234 AND 117 TO FACILITY OPERATING
LICENSES NOS. DPR-66 AND NPF-73
PENNSYLVANIA POWER COMPANY
OHIO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY
FIRSTENERGY NUCLEAR OPERATING COMPANY
BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By letter dated September 20, 1999, the Duquesne Light Company (DLC) submitted a request for changes to the Beaver Valley Power Station, Unit Nos. 1 and 2 (BVPS-1 and 2), Technical Specifications (TSs). The requested changes would revise the standard to which the control room ventilation charcoal and Supplementary Leak Collection and Release System (SLCRS) charcoal must be tested to follow American Society for Testing and Materials (ASTM)

D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," for each BVPS Unit. The requested changes would also: (1) revise the minimum amount of output in kilowatts needed for the control room emergency ventilation system heaters at each BVPS Unit; (2) revise BVPS-1 SLCRS surveillance testing criteria to be consistent with American National Standards Institute/American Society of Mechanical Engineers N510-1980, the BVPS-1 control room ventilation testing, and the BVPS-2 SLCRS control room ventilation testing; and (3) make minor typographical corrections.

At the time of the September 20, 1999, letter, DLC was the licensed operator for BVPS-1 and BVPS-2. On December 3, 1999, DLC's ownership interests in both BVPS-1 and BVPS-2 were transferred to the Pennsylvania Power Company, and DLC's operating authority for BVPS-1 and BVPS-2 was transferred to FirstEnergy Nuclear Operating Company (FENOC). By letter dated December 13, 1999, FENOC requested that the Nuclear Regulatory Commission (NRC) continue to review and act upon all requests before the commission which had been submitted by DLC. By letter dated May 12, 2000, FENOC superseded the September 20, 1999, submittal in its entirety.

2.0 BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, to all holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Two of the purposes of the GL were to:

- (1) Alert addressees that the NRC has determined that testing nuclear-grade activated charcoal to standards other than ASTM D3803-1989 does not provide assurance for complying with the current licensing basis as it relates to the dose limits of General Design Criterion 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.
- (2) Request that addressees determine whether their TSs reference ASTM D3803-1989 for charcoal filter laboratory testing. Addressees whose TSs do not reference ASTM D3803-1989 were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol and provide the information discussed in the requested actions.

As part of its response to GL 99-02, the licensee requested license amendments to change the BVPS-1 and 2 TSs to provide for testing as described in the GL. In addition to the changes requested by the GL, the licensee requested revisions to the minimum amount of output in kilowatts needed for the control room emergency ventilation system heaters at each BVPS Unit; revisions to BVPS-1 SLCRS surveillance testing criteria to be consistent with ANSI/ASME N510-1980, the BVPS-1 control room ventilation testing, and the BVPS-2 SLCRS control room ventilation testing; and minor typographical corrections.

The licensee also submitted, by separate application, revisions to design basis accident (DBA) dose calculations that, among other changes, incorporated revised charcoal filter efficiencies in response to the GL. These revised dose calculations did not result in increases of the postulated accident doses for the DBAs that are of concern with respect to the GL. The NRC staff's review of those revised dose calculations is being addressed separately and is not included in this review. This review is limited to the TS changes discussed in Section 1.0 of this safety evaluation and is not intended to address all of the licensee's actions in response to GL 99-02. The NRC staff's review of the licensee's overall response to the GL will be completed separately.

3.0 EVALUATION

The NRC staff, with technical assistance from Brookhaven National Laboratory (BNL), has reviewed the licensee's submittals. For TS Sections 4.7.7.1.1.d.4, 4.7.7.1.2.d.5, and 4.7.7.1.e.5, the licensee proposed to change the heater output from "5 ± 0.5 kw" to "at least 3.87 kw and not exceeding 5.50 kw." In the May 12, 2000, letter, the licensee provided the BVPS-1 and BVPS-2 ventilation heater calculations to support the change in heater output. The NRC staff reviewed these calculations and performed independent calculations using the same assumptions. The results of the NRC staff's calculations were consistent with the

licensee's results and showed that the heaters will be able to maintain the relative humidity of the air stream less than or equal to 70 percent during DBA conditions. This is consistent with the guidance contained in GL 99-02. Therefore, the proposed changes in heater output are acceptable.

For TS Section 4.7.8.1.b, the licensee proposed to change the frequency from 12 months to 18 months for in-place high-efficiency particulate air filter, in-place charcoal adsorber, charcoal laboratory, and system flowrate testing. The 18 months is consistent with both ANSI/ASME N510-1980 and similar filter testing TS criteria for Section 4.7.8.1.b for BVPS-2 and Section 4.7.7.1.1.c for BVPS-1 and 2. Therefore, the proposed change is acceptable.

The licensee proposed to change the frequency of the air flow distribution test (Unit 1 Section 4.7.8.1) from "at least once per 18 months" to "after initial installation and after any maintenance affecting the flow distribution." This is acceptable because the proposed frequency is consistent with both ANSI/ASME N510-1980 and the Unit 2 TS Section 4.7.8.1.d.

In addition, the staff has reviewed the attached BNL Technical Evaluation Report (TER) regarding the proposed TS changes for BVPS-1 and 2. Based on its review, the NRC 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 satisfy the actions requested in GL 99-02, and 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 TSs that referenced ASTM D3803-1989 and there are no substantive changes between the 1989 and 1998 versions.

The following typographical errors are corrected: (1) In BVPS-1 SR 4.7.7.1.2.c.2, the units for methyl iodine concentration are corrected from "mg/m³" to "mg/m³;" (2) BVPS-1 SR 4.7.7.2.b is changed from the current "At least once per 18 months *be* verifying that:" to "At least once per 18 months *by* verifying that:" (emphasis added); and, (3) BVPS-2 SR 4.7.7.1 is corrected from, "... while the *systems* is operating..." to read "...while the *system* is operating ..." (emphasis added). These corrections are appropriate for the context in which the units and/or wording appear and, therefore, they are acceptable.

In addition to the above changes, a correction of an error that was inadvertently introduced into the BVPS-1 surveillance requirement (SR) 4.7.8.1.b.2 with Amendment No. 56 is incorporated in the newly issued TS pages. Specifically, Amendment No. 56 inadvertently changed the SR from, "Verifying that the HEPA filter banks remove \geq 99% of ..." to "Verifying that the HEPA filter banks remove 99% of" Amendment 56 for BVPS-1 did not evaluate or approve this change as it is in a portion of the SR other than the area of change addressed by that amendment; that amendment only addressed changes to SR 4.7.8.1.b.3. The newly issued BVPS-1 TS page 3/4 7-20 corrects this error. Finally, non-substantive format changes of the TS pages are made to be consistent with the licensee's application.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes 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 52449). 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

Principal Contributors: J. Segala
D. Collins

Date: September 29, 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 REQUEST NO. 263
TO FACILITY OPERATING LICENSE NO. DPR-66 AND AMENDMENT REQUEST NO. 138
TO FACILITY OPERATING LICENSE NO. NPF-73
FIRST ENERGY NUCLEAR OPERATING COMPANY
BEAVER VALLEY POWER STATION, UNIT NO. 1 AND NO. 2
DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By letter dated November 19, 1999 (L-99-157), Duquesne Light Company 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 Beaver Valley Power Station, Unit No. 1 and Unit No. 2. By letter dated September 20, 1999 (L-99-145), Duquesne Light Company requested changes to the Technical Specification (TS) Sections 3/4.7.8, "Supplementary Leak Collection and Release System (SLCRS)," and 3/4.7.7, "Control Room Emergency Air Cleanup and Pressurization System which is also identified as Control Room Emergency Ventilation System (CREVS)" for the Beaver Valley Power Station. By letter dated May 12, 2000 (L-00-046), First Energy Nuclear Operating Company (FENOC), successor to Duquesne Light Company, resubmitted the requested changes to the above TS sections. 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 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.

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 laboratory charcoal sample testing TS surveillance requirements for the Supplementary Leak Collection and Release System (SLCRS) and the Control Room Emergency Ventilation System (CREVS) in both Unit 1 and Unit 2 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 and relative humidity (RH) of 95% for the SLCRS in Unit 1 are acceptable because they are consistent with the test parameters of ASTM D3803-1989. The proposed test relative humidity (RH) of 70% for the SLCRS in Unit 2 and CREVS in Units 1 and 2 are acceptable because these systems are provided with safety-related heaters that maintain less than or equal to 70% RH during maximum accident conditions. This is consistent with the actions requested in GL 99-02.

The credited removal efficiency for radioactive organic iodine for the SLCRS in Unit 2 and CREVS in both Units 1 and 2 is at least 95%. The proposed test penetration for radioactive methyl iodide is less than 1% resulting in a safety factor of more than 2 for these three systems. The proposed credited efficiency for the SLCRS in Unit 1 of at least 79% plus 1% bypass leakage and 10% test penetration for radioactive methyl iodide result in a safety factor of 2. This is consistent with the minimum safety factor of 2 specified in GL 99-02.

In the May 12, 2000 letter, FENOC incorporated the respective design face velocities for both CREVS and SLCRS into the proposed TS surveillance requirements as the test face velocities, given in feet/sec (fps). This is acceptable because it ensures that the testing will be consistent with the operation of the ventilation system during accident conditions and 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 Contributor: Mano Subudhi, BNL

Date: August 18, 2000

BEAVER VALLEY POWER STATION UNITS 1 AND 2

TABLE 1 - CURRENT TS REQUIREMENTS												
System Description						Current TS Requirements						
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (Total = MI + EI) (%)	Test Penetration (Methyl iodide) (%)	Safety Factor	Test Standard	Test Temp (° C)	Test RH (%)	Test Face Velocity (fpm)	
			Res. Time (sec)	Face Velocity (fpm)								
BV-1	3/4.7.7	CREVS ¹	2	0.25	40.8	95	<1	Not Stated (5)*	ANSI N510-1980**	30±1/2	≥70	0.68 fps ±20% (40.8 ±20%)
	3/4.7.8	SLCRS ²	2	0.18-0.22	54.0	84***	<10	Not Stated (1.6)*	USAEC RDT STD M-16-1T June 1972	≥51.67 (125° F)	≥95	0.9 fps ±20% (54 ±20%)
BV-2	3/4.7.7	CREVS ³	2	0.25	42.0	95	<1	Not Stated (5)*	ANSI N510-1980**	30±1/2	≥70	0.7 fps ±20% (42 ±20%)
	3/4.7.8	SLCRS ⁴	2	0.25	42.0	95	<1	Not Stated (5)*	ANSI N510-1980**	30±1/2	≥70	0.7 fps ±20% (42 ±20%)

ESF Systems:

- 1 BV-1 CREVS: Control Room Emergency Ventilation Subsystem
- 2 BV-1 SLCRS: Supplemental Leak Collection and Release System
- 3 BV-2 CREVS: Control Room Emergency Air Cleanup and Pressurization System
- 4 BV-2 SLCRS: Supplemental Leak Collection and Release System

* Safety factors are calculated based on the credited efficiency and test penetration values.
 ** ANSI N510-1980 references ASTM D3803-1979.
 *** The Unit 1 SLCRS credited efficiency is based on the November 19,1999 letter (L-99-157).

BEAVER VALLEY POWER STATION UNITS 1 AND 2

TABLE 2 - PROPOSED TS REQUIREMENTS												
System Description							Proposed TS Requirements					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (Total = MI+EI) (%)	Test Penetration (Methyl iodide) (%)	Safety Factor	Test Standard	Test Temp (° C)	Test RH (%)	Test Face Velocity (fpm)	
			Res. Time (sec)	Face Velocity (fpm)								
BV-1	3/4.7.7	CREVS ¹	2	0.25	40.8	95	<1	5	ASTM D3803-1989	30	≥70 ***	0.68fps (40.8) **
	3/4.7.8	SLCRS ²	2	0.18-0.22	54.0	80*	<10	2	ASTM D3803-1989	30	≥95 ***	0.9 fps (54) **
BV-2	3/4.7.7	CREVS ³	2	0.25	42.0	95	<1	5	ASTM D3803-1989	30	≥70 ***	0.7 fps (42) **
	3/4.7.8	SLCRS ⁴	2	0.25	42.0	95	<1	5	ASTM D3803-1989	30	≥70 ***	0.7 fps (42) **

ESF Systems

- 1 BV-1 CREVS: Control Room Emergency Ventilation Subsystem
- 2 BV-1 SLCRS: Supplemental Leak Collection and Release System
- 3 BV-2 CREVS: Control Room Emergency Air Cleanup and Pressurization System
- 4 BV-2 SLCRS: Supplemental Leak Collection and Release System

* The licensee is committed to perform a Fuel Handling Accident analysis to address a Unit 1 SLCRS charcoal filter efficiency of 79% for organic iodine plus 1% bypass leakage.

** Test face velocity is stated in the TS surveillance requirements.

*** As noted in the proposed TS sections, the test conditions, including test parameter tolerances, shall be in accordance with ASTM D3803-1989.