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A Global Energy Company

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April 10, 2008
GDP 08-0009

Mr. Michael F. Weber
Director, Office of Nuclear Material Safety and Safeguards
Attention: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Portsmouth Gaseous Diffusion Plant (PORTS)
Docket No. 70-7002, Certificate No. GDP-2
Application for Renewal of Certificate of Compliance, GDP-2

Dear Mr. Weber:

In accordance with 10 CFR 76.31 and 76.36, the United States Enrichment Corporation (USEC or Corporation) hereby submits its Application for renewal of Certificate GDP-2. This Application for renewal is based on USEC's previous Application (USEC-02), as revised through Revision 89 dated April 15, 2008.

Certificate GDP-2 currently has an expiration date of December 31, 2008. Based on the information contained in the enclosed Application and incorporated by reference, USEC requests that the Nuclear Regulatory Commission (NRC) renew Certificate of Compliance GDP-2 for a 5-year period coinciding with an expiration date of December 31, 2013.

Enclosure 1 contains the Oath and Affirmation. Enclosure 2 provides the basis for USEC's renewal Application. Enclosure 3 contains NESHAP reports for CY2002 through CY2006. Enclosure 4 contains quarterly radiological monitoring discharge reports for CY2003 through CY2007. Enclosure 5 contains Ambient Gamma Levels for PORTS from the environmental TLD monitoring systems and Summary of Notice of Violations (NOVs), permit exceedances, or other citations issued to PORTS for CY2003 through CY2007. Enclosures 3, 4 and 5 are provided in response to NRC's request that USEC consolidate environmental reports for each year since last certification and submit them with this re-certification request (Reference).

NMSS01

Should you have any questions regarding this matter, please contact Steve Toelle at (301) 564-3250.

Sincerely,

R Van Namen

Robert Van Namen

Reference: Letter from Brian W. Smith (NRC) to Steven A. Toelle (USEC), Environmental Compliance Status Report Related Information, dated August 7, 2007.

Enclosures:

1. Oath and Affirmation
2. United States Enrichment Corporation, Portsmouth Gaseous Diffusion Plant, Docket No. 70-7002, Application for Renewal of Certificate of Compliance GDP-2, April 10, 2008
3. National Emissions Standard for Hazardous Air Pollutants (NESHAP) CY2002 through CY2006
4. Quarterly Radiological Monitoring Discharge Reports for Plant Outfalls (QRMDR) CY2003 through CY2007
5. Ambient Gamma Levels for PORTS from the Environmental TLD Monitoring Systems and Summary of Notice of Violations (NOVs), Permit Exceedances, or Other Citations Issues for PORTS (NPDES) CY2003 through CY2007

cc: M. Tschiltz, NRC HQ
J. Hensen, NRC Region II
M. Miller, NRC Senior Resident Inspector, PGDP
D. Hartland, NRC Region II
M. Raddatz, NRC Project Manager
R. DeVault, DOE
C. Voth, DOE

Enclosure 1

Oath and Affirmation
GDP 08-0009

OATH AND AFFIRMATION

I, Robert Van Namen, swear and affirm that I am the Senior Vice President, Uranium Enrichment , of the United States Enrichment Corporation (USEC), that I am authorized by USEC to sign and file with the Nuclear Regulatory Commission this April 10, 2008 Application for Renewal of Certificate of Compliance GDP-2, for the Portsmouth Gaseous Diffusion Plant, contained in USEC Letter GDP 08-0009, that I am familiar with the contents thereof, and that the statements made and matters set forth therein are true and correct to the best of my knowledge, information, and belief.

R Van Namen

Robert Van Namen

On this 10th day of April, 2008, the officer signing above personally appeared before me, is known by me to be the person whose name is subscribed to within the instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof I hereunto set my hand and official seal.

Rita L Peak

Rita L. Peak, Notary Public
State of Maryland, Montgomery County
My commission expires December 1, 2009

United States Enrichment Corporation
Portsmouth Gaseous Diffusion Plant
Docket No. 70-7002
Application for Renewal of Certificate of Compliance GDP-2
April 10, 2008

In accordance with 10 CFR 76.31 and 76.36, the United States Enrichment Corporation (USEC or Corporation) hereby submits its Application for renewal of Certificate GDP-2. This Application for renewal is based on USEC's previous Application (USEC-02), as revised through Revision 89 dated April 15, 2008, and USEC's previous Compliance Plan (DOE/ORO-2027), as revised through Revision 11 dated January 11, 2001.

1.0 Requested Expiration Date

Certificate GDP-2 currently has an expiration date of December 31, 2008. Based on the information contained in this Application and incorporated by reference, USEC requests that the Nuclear Regulatory Commission (NRC) renew Certificate of Compliance GDP-2 for a 5-year period coinciding with an expiration date of December 31, 2013.

2.0 Information Required by 10 CFR 76.31 and 76.36

76.31 *The Corporation shall periodically apply to the Commission for a certificate of compliance, in accordance with § 76.36, on or before April 15 of the year specified in an existing certificate of compliance as determined by the Commission, but not less frequently than every 5 years.*

76.36(a) The Corporation shall file periodic applications for renewal, as required by § 76.31.

In accordance with 10 CFR 76.31 and 10 CFR 76.36 (a), USEC is filing the periodic Application for renewal as described in this letter (GDP 08-0009). USEC's Application for renewal is dated April 10, 2008

76.36(b) Information contained in previous applications, statements, or reports filed with the Commission may be referenced as part of the application, provided that the reference is clear and specific.

Section 5.0 of this correspondence specifically identifies previous Applications, statements, and reports that are incorporated by reference into this renewal Application.

76.36(c) An application for renewal is subject to the requirements in § 76.33 and must contain the following information:

(1) The information specified in § 76.35; or,

(2) A statement by the Corporation that the NRC may rely upon the information provided in the previous application(s) upon which the existing certificate is based, except for:

(i) Any proposed changes in the existing certificate of compliance conditions or technical safety requirements;

(ii) Any proposed changes to the documents submitted with the previous application in accordance with § 76.35;

(iii) Any changes which the Corporation has made without prior NRC approval pursuant to § 76.68; and,

(iv) Any changes to certificate conditions or technical safety requirements for which the Corporation has sought and received Commission approval pursuant to § 76.45.

10 CFR 76.35 specifies the contents of an Application for a Certificate of Compliance. USEC's Application and Compliance Plan for PORTS, as approved by the NRC on November 26, 1996, and as subsequently revised in accordance with 10 CFR 76, satisfy those requirements. Pursuant to 10 CFR 76.36(b) and (c)(2), the NRC may rely upon the information provided in USEC's previous Applications for PORTS, and the NRC-approved Compliance Plan for PORTS, upon which Certificate GDP-2 is based except for any changes which USEC has made without prior NRC approval pursuant to 10 CFR 76.68 [Reference § 76.36 (c)(2)(iii)]. Records of the changes made in accordance with 10 CFR 76.68 are retained and are available at the site for NRC review.

In connection with this Application for renewal, USEC is not proposing to make any additional changes to the existing certificate conditions, technical safety requirements, or other documents submitted with its previous Application (as revised through Revision 89) and Compliance Plan (as revised through Revision 11) with the exception of a Certificate Amendment Request (GDP 08-0001) previously submitted to the NRC January 07, 2008, Revision of X-326 Cell Treatment Monitoring Technical Safety Requirement and HEU/MEU Deposit Removal Project. USEC is not submitting any additional information with respect to these topics pursuant to 10 CFR 76.36(c)(2)(i) and (ii).

In accordance with 10 CFR 76.36(c)(iv), all changes to certificate conditions or technical safety requirements for which USEC has sought and received NRC approval have been incorporated into USEC's previous Application for PORTS (USEC-02) as revised through Revision 89 dated April 15, 2008.

76.36(d) The changes which are submitted as part of an application for renewal in accordance with paragraph (c)(2) of this section, must be in the form of specific changes to the documentation specified in § 76.35. The changes must be marked and dated for easy identification.

Section 5.0 specifically identifies the revisions of the Application (USEC-02) and the Compliance Plan (DOE/ORO-2027) that are incorporated by reference into this renewal Application. The referenced revisions are in the form of specific changes to the documentation specified in 10 CFR 76.35 which have been marked and dated for easy identification.

3.0 Information Required by 10 CFR 76.35(n)

76.35(n) A description of the funding program to be established to ensure that funds will be set aside and available for those aspects of the ultimate disposal of waste and depleted uranium, decontamination and decommissioning, relating to the gaseous diffusion plants leased to the Corporation by the Department of Energy, which are the financial responsibility of the Corporation. The Corporation shall establish financial surety arrangements to ensure that sufficient funds will be available for the ultimate disposal of waste and depleted uranium, and decontamination and decommissioning activities which are the financial responsibility of the Corporation. The funding mechanism, such as prepayment, surety, insurance, or external sinking fund, must ensure availability of funds for any activities which are required to be completed both before or after the return of the gaseous diffusion facilities to the Department of Energy in accordance with the lease between the Department and the Corporation. The funding program must contain a basis for cost estimates used to establish funding levels and must contain means of adjusting cost estimates and associated funding levels over the duration of the lease. The funding program need not address funding for those aspects of decontamination and decommissioning of the gaseous diffusion plants assigned to the Department of Energy under the Atomic Energy Act of 1954, as amended. The Corporation should address the adequacy of the financing mechanism selected in its periodic application for certification.

A revised Depleted Uranium Management Plan (DUP) and Decommissioning Funding Program Description (DFP) along with Financial Assurance for Calendar Year 2008 were submitted to the NRC on December 21, 2007 (GDP 07-0041). In accordance with Condition 15 of the PORTS Certificate of Compliance decommissioning cost estimates and funding levels will be reviewed in October of 2008 for 2009 and as necessary financial instruments submitted by December of

2008. In conjunction with any resultant revisions to the DUP and DFP for 2009, Table 1 of the DUP will be revised to reflect projected estimates for the amount of depleted uranium generated by USEC through calendar year 2013.

4.0 Information Required by 10 CFR 76.68(b)

76.68(b) To ensure that the approved application remains current with respect to the actual site description and that the plant's programs, plans, policies, and operations are in place, the Corporation shall submit revised pages to the approved application and safety analysis report, marked and dated to indicate each change. The Corporation shall evaluate any as-found conditions that do not agree with the plant's programs, plans, policies, and operations in accordance with paragraph (a) of this section. These revisions must be submitted before April 15 of each calendar year, or at a shorter interval as may be specified in the certificate. If a renewal application for a certificate is filed in accordance with Sec. 76.36 of this part, the revisions shall be incorporated into the application.

In accordance with 10 CFR 76.68(b), the 2008 Annual Update (USEC-02 Revision 89, April 15, 2008) to the certification documents for PORTS was submitted to the NRC by USEC letters GDP 08-0011 and GDP 08-0012 dated April 10, 2008. The 2008 Annual Update is incorporated by reference into this renewal Application.

5.0 Information Incorporated by Reference

The following information is incorporated by reference into this Application for renewal of Certificate GDP-2.

5.1 USEC-02, "Application for United States Nuclear Regulatory Commission Certification," Portsmouth Gaseous Diffusion Plant, Docket No. 70-7002, Revisions 1 through 89 as shown in the following table.

USEC-02 Revision	Date of Revision	Transmitted by USEC Letter(s)	Purpose of Revision
1	9/15/95	GDP 95-0010, GDP 95-0011, GDP 95-0012 dated 9/15/95	Transmit Volumes 1 through 4 of the Application for initial certification.
2	1/19/96	GDP 96-0029, GDP 96-0030, GDP 96-0035 dated 2/13/96	Transmit changes to the Application for initial certification.
3	5/31/96	GDP 96-0113, GDP 96-0114, GDP 96-0116 dated 5/31/96	Transmit changes to the Application for initial certification.
4	7/26/96	GDP 96-0152, GDP 96-0153, GDP 96-0154 dated 7/26/96	Transmit changes to the Application for initial certification.
5	8/1/96	GDP 96-0162 dated 8/1/96	Transmit changes to the TSRs for initial certification.
6	8/12/96	GDP 96-0170 dated 8/12/96	Transmit changes to the TSRs for initial certification.
7	3/7/97	GDP 97-0032 dated 3/7/97	Transmit changes to: (1) the TSRs that were approved by the NRC via Amendment 1 to Certificate GDP-2, (2) TSR basis statements that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
8	4/15/97	GDP 97-0058, GDP 97-0059, GDP 97-0060 dated 4/15/97	Transmit the 1997 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
9	5/14/97	GDP 97-0072 dated 5/12/97	Transmit changes to the TSRs that were approved by the NRC via Amendment 2 to Certificate GDP-2.

10	5/23/97	GDP 97-0010 dated 6/13/97	Transmit changes to TSR basis statements that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
11	7/17/97	GDP 97-0123 dated 7/16/97	Transmit changes to the TSRs that were approved by the NRC via Amendment 3 to Certificate GDP-2.
12	9/5/97	GDP 97-0157, GDP 97-0161, GDP 97-0162 dated 9/10/97	Transmit changes to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
13	9/29/97	GDP 97-0174 dated 10/2/97	Transmit changes to: (1) the SAR and TSRs that were approved by the NRC via Amendment 4 to Certificate GDP-2, (2) TSR basis statements that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
14	11/5/97	GDP 97-0197 dated 11/17/97	Transmit changes to the SAR and TSRs that were approved by the NRC via Amendment 5 to Certificate GDP-2.
15	12/19/97	GDP 97-0218, GDP 97-0219, GDP 97-0220 dated 12/24/97	Transmit changes to the SAR and programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
16	1/4/98	GDP 97-0225 dated 12/30/97	Transmit changes to the SAR that were approved by the NRC via Amendment 8 to Certificate GDP-2.
17	1/12/98	GDP 98-0005 dated 1/20/98	Transmit changes to the SAR and TSRs that were approved by the NRC via Amendment 7 to Certificate GDP-2.
18	2/6/98	GDP 98-0020 dated 2/10/98	Transmit changes to: (1) the TSRs that were approved by the NRC via Amendment 6 to Certificate GDP-2, (2) the SAR and TSRs that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
19	4/15/98	GDP 98-0068, GDP 98-0069, dated 4/14/98	Transmit the 1998 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
20	4/27/98	GDP 98-0100, GDP 98-0101 dated 5/11/98	Transmit changes to the SAR, and to a program and plan, that were approved by the NRC in Amendments 10 to Certificate GDP-2 (original issue date of 11/26/96).

21	7/19/98	GDP 98-0143 dated 7/20/98	Transmit changes to: (1) the SAR and TSRs that were approved by the NRC in Amendments 11 and 12 to Certificate GDP-2 (original issue date of 11/26/96), respectively, (2) the SAR that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
22	7/28/98	GDP 98-0152, GDP 98-0153, GDP 98-0154 dated 7/28/98	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
23	8/6/98	GDP 98-0168, GDP 98-0169, GDP 98-0170 dated 8/6/98	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
24	8/15/98	GDP 98-0164, GDP 98-0165, GDP 98-0166 dated 8/17/98	Transmit changes to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
25	10/21/98	GDP 98-0220 dated 10/22/98	Transmit changes to the TSRs and SAR that were approved by the NRC in Amendment 13 to Certificate GDP-2 (original issue date of 11/26/96).
26	11/6/98	GDP 98-0249 dated 11/6/98	Transmit changes to the SAR, to programs and plans, and to TSR Bases that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
27	12/11/98	GDP 98-0275, GDP 98-0276, GDP 98-0278 dated 12/16/98	Transmit changes to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
28	1/15/99	GDP 99-0014 dated 1/26/99	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 15 to Certificate GDP-2 (original issue date of 11/26/96), (2) the SAR that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
29	2/14/99	GDP 99-0036 dated 2/16/99	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 17 to Certificate GDP-2 (original issue date of 11/26/96), (2) the SAR that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.

30	2/27/99	GDP 99-0041 dated 3/2/99	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 19 to Certificate GDP-2 (original issue date of 11/26/96), (2) the SAR that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
31	4/14/99	GDP 99-0060, GDP 99-0061, GDP 99-0062 dated 4/14/99	Transmits the 1999 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
32	6/30/99	GDP 99-0103, GDP 99-0104, GDP 99-0105 dated 8/4/99	Transmit changes to: (1) programs and plans, and the TSRs, that were approved by the NRC in Amendment 2 and 3 to Certificate GDP-2, respectively, (2) the SAR, and to program and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
33	8/13/99	GDP 99-0144, GDP 99-0145, GDP 99-0146 dated 8/13/99	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
34	9/10/99	GDP 99-0167, GDP 99-0165, GDP 99-0166 dated 9/14/99	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
35	12/3/99	GDP 99-0211 dated 12/3/99	Transmit changes to: (1) the QAP that were approved by the NRC in Amendment 4 to Certificate GDP-2, (2) the QAP that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
36	12/13/99	GDP 99-0216, GDP 99-0217, GDP 99-0218 dated 12/14/99	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
37	12/22/99	GDP 99-0226 dated 12/22/99	Transmit changes to: (1) programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (2) administrative corrections to the SAR introduced in Revision 36.
38	4/14/00	GDP 00-0062, GDP 00-0063, GDP 00-0064 dated 4/14/00	Transmits: (1) the 2000 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (2) administrative corrections to previous revisions of the Application.

39	5/3/00	GDP 00-0077 dated 5/4/00	Transmit changes to: (1) the SAR to incorporate administrative corrections to Revision 38, (2) the SAR to reinsert pages inadvertently removed by Revision 38. These SAR pages were reviewed in accordance with 10 CFR 76, as required, and determined not to require prior NRC approval.
40	5/5/00	GDP 00-0070 dated 5/5/00	Transmit changes to the TSRs that were approved by the NRC in Amendment 6 to Certificate GDP-2.
41	5/31/00	GDP 00-0094 dated 5/31/00	Transmit changes to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
42	6/29/00	GDP 00-0119 dated 6/30/00	Transmit changes to: (1) the QAP that were approved by the NRC in Amendment 5 to Certificate GDP-2, (2) the QAP that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
43	8/11/00	GDP 00-0149, GDP 00-0150, GDP 00-0151 dated 8/11/00	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
44	8/25/00	GDP 00-0155 dated 8/28/00	Transmit changes to the SAR that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
45	11/28/00	GDP 00-0206 dated 11/28/00	Transmit changes to the QAP that were approved by the NRC in Amendment 8 to Certificate GDP-2.
46	12/15/00	GDP 00-0227, GDP 00-0228, GDP 00-0229 dated 12/19/00	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
47	1/31/01	GDP 01-0030 dated 2/1/01	Transmit changes to the SAR that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
48	4/6/01	GDP 01-0073, GDP 01-0074 dated 4/9/01	Transmit the 2001 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.

49	4/20/01	GDP 01-0082, GDP 01-0083 dated 4/24/01	Transmit changes to: (1) the TSRs, the SAR, and programs and plans, that were approved by the NRC in Amendment 14 to Certificate GDP-2, (2) the SAR and the TSRs that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (3) the SAR to reinsert two pages inadvertently removed by Revision 48.
50	4/27/01	GDP 01-0089, GDP 01-0090, GDP 01-0091 dated 5/7/01	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 13 to Certificate GDP-2, (2) the SAR, and to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
51	5/1/01	GDP 01-0089 dated 5/7/01	Transmit changes to the SAR and TSRs that were approved by the NRC in Amendment 11 to Certificate GDP-2.
52	5/23/01	GDP 01-0103, GDP 01-0104 dated 5/24/01	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 15 to Certificate GDP-2, (2) the SAR, and to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
53	6/1/01	GDP 01-0107, GDP 01-0108 dated 6/4/01	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
54	8/6/01	GDP 01-0134 dated 8/7/01	Transmit changes to the TSRs that were approved by the NRC in Amendment 16 to Certificate GDP-2.
55	8/10/01	GDP 01-0136, GDP 01-0137, GDP 01-0138 dated 8/10/01	Transmit changes to: (1) the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (2) program and plans reviewed by NRC as documented in NRC's letter of May 9, 2001.
56	12/19/01	GDP 01-0195, GDP 01-0196, GDP 01-0197 dated 12/20/01	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 19 to Certificate GDP-2, (2) the SAR, and to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.

57	4/12/02	GDP 02-0028, GDP 02-0029, GDP 02-0030 dated 4/12/02	Transmit: (1) changes to the TSRs that were approved by NRC in Amendment 21 to Certificate GDP-2, (2) the 2002 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
58	5/5/02	GDP 02-0047, GDP 02-0048 dated 5/6/02	Transmit changes to: (1) the GDPSP that were approved by the NRC in Amendment 20 to Certificate GDP-2, (2) the SAR, and to a program and plan that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
59	8/16/02	GDP 02-0070, GDP 02-0071 dated 8/16/02	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
60	9/14/02	GDP 02-0084 dated 9/17/02	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 23 to Certificate GDP-2, (2) SAR pages that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
61	12/6/02	GDP 02-0108 dated 12/9/02	Transmit changes to the SAR, and to the QAP, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. These changes were related to Revision 15 of the PTQAP.
62	12/13/02	GDP 02-0115, GDP 02-0116 dated 12/16/02	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.
63	12/19/02	GDP 02-0123 dated 12/23/02	Transmit changes to the TSRs that were approved by the NRC in Amendment 24 to Certificate GDP-2.
64	2/21/03	GDP 03-0013 dated 2/24/03	Transmit changes to the QAP that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. These changes were related to Revision 16 of the PTQAP.

65	4/11/03	GDP 03-0026, GDP 03-0027 dated 4/11/03	Transmits (1) the 2003 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (2) changes to the TSRs that were approved by the NRC in Amendment 25 to Certificate GDP-2.
66	8/15/03	GDP 03-0051 dated 8/15/03	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR & EP)*
67	9/12/03	GDP 03-0063 GDP 03-0064 dated 11/21/03	Transmit changes to the SARUP and Chapter 3 Update, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SARUP & CH 3 Update, FNMCP & GDPSP).*
68	11/21/03	GDP 03-0063 GDP 03-0064 dated 11/21/03	Additional changes to the application and to programs and plans that were approved since implementation of the SARUP and Chapter 3 Update amendments in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, FNMCP & GDPSP).*
69	12/12/03	GDP 03-0069 GDP 03-0070 dated 12/15/03	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, EP, GDPSP)*
N/A	2/23/04	N/A	Amendment 1 - An administrative error - emission of Condition 17 from Certification of Compliance GDP-2. Correction of Certificate was supplied.
71	2/27/04	GDP 04-0010 GDP 04-0013 dated 3/4/04	Transmit changes to the SAR and FNMCP that were approved by the NRC in Amendment 2 to Certificate GDP-2. (*SAR & FNMCP)*
72	3/15/04	GDP 04-0017 GDP 04-0018 dated 3/19/04	Transmit changes to the SAR and FNMCP that were approved by the NRC in Amendment 3 to Certificate GDP-2. (*SAR & FNMCP)*

73	4/12/04	GDP 04-0020 GDP 04-0021 dated 4/14/04	Transmits: (1) the 2004 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (2) corrections to previous revisions of the application to correctly reflect the changes reviewed and approved in accordance with 10 CFR 76. *(SAR, GDPSP, FNMCP, TSR)*
74	5/28/04	GDP 04-0036 dated 6/2/04	Transmit changes to the QAP that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. (QAP)
75	8/13/04	GDP 04-0047 GDP 04-0048 dated 8/16/04	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, EP, GDPSP, FNMCP)*
76	12/15/04	GDP 04-0068 GDP 04-0069	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, EP, GDPSP, & FNMCP)*
77	2/25/05	GDP 05-0007 dated 3/15/05	Transmit changes to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(DFP & DUMP)*
78	4/14/05	GDP 05-0018 GDP 05-0019 dated 4/14/05	Transmit the 2005 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, QAP, EP & FNMCP)*
79	8/12/05	GDP 05-0034 dated 8/12/05	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, EP, TSR(safety basis only) and ESCR)*
80	1/27/06	GDP 06-0001 GDP 06-0002 dated 1/27/06	Transmits (1) changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval, (2) administrative correction to List of Effective pages in the Technical Safety Requirements. *(SAR, EP, FNMCP, GDPSP & TSR)*

81	3/28/06	GDP 06-0017 GDP 06-0018 dated 3/28/06	Transmit changes to: (1) the TSRs that were approved by the NRC in Amendment 4 to Certificate GDP-2, (2) the SAR, and to programs and plans that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(TSR, SAR & FNMCP)*
82	4/13/06	GDP 06-0023 GDP 06-0024 dated 4/13/06	Transmit the 2006 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR & FNMCP)*
18	7/26/06	GDP 06-0040 dated 7/27/06	Transmit changes to the PTQAP, No. 0832, Revision No. 18. This approval satisfied the requirements of 10 CFR 71.17(b) and 71.101(c) for a QA Program approved by the NRC. *(PTQAP)*
83	8/11/06	GDP 06-0044 GDP 06-0045 dated 8/15/06	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. This revision includes the separation of common programs QAP and GDPSP for the sites *(SAR, QAP, EP, RWMP, FNMCP,& GDPSP)*
84	12/15/06	GDP 06-0058 GDP 06-0059 dated 12/15/06	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, EP, FNMCP & GDPSP)*
85	4/13/07	GDP 07-0010 GDP 07-0011 dated 4/13/07	Transmit the 2007 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, QAP, FNMCP, DFP & DUMP)*
N/A	7/13/07	N/A	Amendment 5 - Allow the DOE to perform a radiological survey using a helicopter. No associated application changes were required.
86	8/15/07	GDP 07-0030 GDP 07-0031 dated 8/15/07	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, QAP, & GDPSP)*
N/A	9/20/07	N/A	Changes to the GDPSP in Amendment 6 to Certificate GDP-2.

87	12/13/07	GDP 07-0042 GDP 07-0043 dated 12/13/07	Transmit changes to the SAR, and to programs and plans, that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval. *(SAR, EP, FNMCP, GDPSP & RWMP)*
88	12/19/07	GDP 07-0034 dated 12/19/07	Transmit changes to the GDPSP that were approved by the NRC in Amendment 6 to Certificate GDP-2. At the request of USEC the effective date for this amendment was revised to coordinate with approval of similar changes to the ACP Security Plan. The revised effective date was issued in Amendment 7. (*GDPSP*)
89	4/15/08	GDP-08-0011 GDP 08-0012 dated 4/10/08	Transmits (1) the 2008 Annual Update of changes to the Application that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval.

5.2 DOE/ORO-2027, "Plan for Achieving Compliance with NRC Regulations at the Portsmouth Gaseous Diffusion Plant (the Compliance Plan)," Docket No. 70-7002, Revisions 3 through 11 as shown in the following table.

Compliance Plan Revision	Date of Revision	Transmitted by USEC Letter(s)	Purpose of Revision
3	7/9/96 7/15/96 7/17/96	GDP 96-0136, GDP 96-0137 dated 7/12/96 GDP 96-0142 dated 7/15/96 GDP 96-0143 dated 7/18/96	Transmit changes to the Compliance Plan for initial certification.
3A	8/1/96	GDP 96-0163, GDP 96-0164 dated 8/1/96	Transmit changes to the Compliance Plan for initial certification.
4	4/15/97	GDP 97-0058, GDP 97-0059 dated 4/15/97	Transmit changes to: (1) Issues 4 and 21 that were reviewed in accordance with 10 CFR 76 and determined not to require prior NRC approval; (2) Issues 8, 9, 23, 24, 30, 32, and A.4 that were acknowledged by the NRC in a letter dated December 18, 1996.

5	1/4/98	GDP 97-0225 dated 12/30/97	Transmit changes that were approved by the NRC via Amendment 8 to Certificate GDP-2 (original issue date of 11/26/96).
6	3/12/98	GDP 98-0048 dated 3/16/98	Transmit changes that were approved by the NRC via Amendment 9 to Certificate GDP-2(original issue date of 11/26/96) .
7	4/27/98	GDP 98-0102 dated 5/11/98	Transmit changes that were approved by the NRC via Amendment 10 to Certificate GDP-2 (original issue date of 11/26/96).
8	9/26/98	GDP 98-0202 dated 9/28/98	Transmit changes that were approved by the NRC via Amendment 14 to Certificate GDP-2 (original issue date of 11/26/96).
9	12/28/98	GDP 99-0001 dated 1/7/99	Transmit changes that were approved by the NRC via Amendment 18 to Certificate GDP-2 (original issue date of 11/26/96).
10	4/6/99	GDP 99-0066 dated 4/13/99	Transmit changes that were approved by the NRC via Amendment 1 to Certificate GDP-2.
11	1/31/01	GDP 01-0030 dated 2/1/01	Transmit changes that were approved by the NRC via Amendment 10 to Certificate GDP-2.

6.0 Reference Documents

6.1 Letter from Steven A. Toelle (USEC) to Michael F. Weber (NRC), Portsmouth Gaseous Diffusion Plant (PORTS), Docket No. 70-7002, Certificate No. GDP-2, Transmittal of Changes to the Decommissioning Funding Program Description and Depleted Uranium Management Plan and Financial Assurance for Calendar Year 2008 (GDP 07-0041).

6.2 Letter from Steven A. Toelle (USEC) to Michael F. Weber (NRC), Portsmouth Gaseous Diffusion Plant (PORTS), Docket No. 70-7002, Certificate No. GDP-2, Certificate Amendment Request, Revision of X-326 Cell Treatment Monitoring Technical Safety Requirement and HEU/MEU Deposit Removal Project (GDP 08-0001).

6.3 Letter from Steven A. Toelle (USEC) to Michael F. Weber (NRC), Portsmouth Gaseous Diffusion Plant (PORTS), Docket No. 70-7002, Certificate No GDP-2, Transmittal of 2008 Annual Update to Certification Application (GDP 08-0011 Non Proprietary).

6.4 Letter from Steven A. Toelle (USEC) to Michael F. Weber (NRC), Portsmouth Gaseous Diffusion Plant (PORTS), Docket No. 70-7002, Certificate No. GDP-2, transmittal of 2008 Annual Update to Certification Application (GDP 08-0012 Proprietary).

Enclosure 3
GDP 08-0009

National Emissions Standard for
Hazardous Air Pollutants (NESHAP)
CY2002 through CY2006

United States Enrichment Corporation (USEC)
Air Emissions Annual Report
(Under Subpart H, 40 CFR 61.94)
Calendar Year 2002

Site Name: Portsmouth Gaseous Diffusion Plant

Operator: United States Enrichment Corporation

Address: Post Office Box 628, Mail Stop 9030
3930 U.S. Route 23 South
Piketon, Ohio 45661

Contact: T. Michael Taimi

Phone: (301) 564-3409

Owner: U.S. Department of Energy

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SECTION 1.0 FACILITY INFORMATION

1.1 Site Description

The Portsmouth Gaseous Diffusion Plant (PORTS) is owned by the Department of Energy (DOE). PORTS was operated by DOE until July 1, 1993. In 1992, Congress passed legislation amending the Atomic Energy Act of 1954 (the Act) to create the United States Enrichment Corporation, a government corporation, to operate the uranium enrichment enterprise in the United States. The government corporation began operation on July 1, 1993. In accordance with the Act, the United States Enrichment Corporation leased all production facilities at PORTS and its sister plant at Paducah, Kentucky from DOE. DOE retained operational control of all waste storage and handling facilities as well as all sites undergoing environmental restoration. In keeping with the Act, on July 28, 1998, the U.S. Department of the Treasury sold the uranium enrichment enterprise through an Initial Public Offering (IPO). USEC, Inc. officially became a private corporation on that date. The Portsmouth and Paducah gaseous diffusion plants are operated by a subsidiary of USEC, Inc., the United States Enrichment Corporation (USEC). In May 2001, USEC ceased uranium enrichment operations at PORTS. USEC continues to operate transfer facilities and certain support facilities at PORTS. USEC also continues to maintain the enrichment cascade in a standby condition under contract to DOE.

The PORTS site is located in sparsely populated, rural Pike County, Ohio, on a 16.2-km^2 (6.3-mile^2) site about 1.6 km (1 mile) east of the Scioto River Valley at an elevation of approximately 36.6 m (120 ft) above the Scioto River floodplain. The terrain surrounding the plant, except for the Scioto River floodplain, consists of marginal farmland and densely forested hills. The Scioto River floodplain is farmed extensively, particularly with grain crops such as corn and soybeans.

Pike County has a generally moderate climate. Winters in Pike County are moderately cold, and summers are moderately warm and humid. The precipitation is usually well distributed with fall being the driest season. Prevailing winds at the site are out of the southwest to south. Average wind speeds are about 5 mph (8 km/h) although winds of up to 75 mph (121 km/h) have been recorded at the plantsite. Usually, high winds are associated with thunderstorms that occur in spring and summer. Southern Ohio lies within the Midwestern tornado belt, although no tornados have struck the plantsite to date.

Pike County has approximately 27,695 residents (2000 census data). Scattered rural development is typical; however, the county contains numerous small villages such as Piketon, Wakefield, and Jasper, which lie within a few kilometers of the plant. The county's largest community, Waverly, is about 19 km (12 miles) north of the plantsite and has a population of approximately 4,433 residents. Additional population centers within 80 km (50 miles) of the plant are Portsmouth (population 20,909), Chillicothe (population 21,796), and Jackson (population 6,184). The total population of the area lying within an 80-km (50-mile) radius of the plant is approximately 669,000.

USEC is responsible for the principal site process and support operations. Until May 2001, the principal site process was the separation of uranium isotopes through gaseous diffusion. From then until June 2002, the principal site process was quality control sampling, packaging and shipping of uranium enriched elsewhere. A normal part of the packaging process was the removal of residual technetium-99 (^{99}Tc) with chemical absorbents. In June 2002, the transfer and sampling facilities were dedicated to removing ^{99}Tc from UF_6 feedstock prior to enrichment. In addition, USEC is continuing to decontaminate some of the enrichment equipment in situ and is maintaining the gaseous diffusion process equipment in "cold standby" under contract to the DOE.

Support operations include the withdrawal of material from the decontaminated process equipment, treatment of water for both potable and cooling purposes, steam generation for heating purposes, decontamination of equipment either in situ or removed from the process, recovery of uranium from various waste materials, and treatment of industrial wastes generated onsite. DOE is responsible for operations such as the X-326 "L-Cage" and its glove box, the X-345 High Assay Sampling Area (HASA), and site remediation activities. Because of the separation of responsibilities, DOE and USEC are submitting separate annual NESHAP reports and are certifying only those activities for which they have direct responsibility. The following section is a description of USEC's emissions sources.

1.2 Source Description

1.2.1 Radionuclides Used at the Facility

As discussed above, the principal site process was the separation of uranium isotopes as UF_6 until May 2001 and still is the sampling and transfer of UF_6. Large quantities of UF_6 are located on the site. From May 2001 until June 2002, UF_6 enriched in the ^{235}U isotope was received from the Paducah Gaseous Diffusion Plant located in Paducah, Kentucky for quality control sampling, packaging and shipment to customers. Since June, unenriched UF_6 from both the Paducah and PORTS stockpiles has been sampled and re-packaged for USEC's own use. In both cases, the UF_6 contains trace quantities of other radionuclides introduced from DOE's practice during the years 1953 to 1975 of intermittently feeding reprocessed reactor fuel from government reactors in addition to the unused UF_6 more commonly used. Of these trace radionuclides, the only one that was historically detectable in emissions from PORTS is ^{99}Tc. Between June and the end of 2002, PORTS has also detected occasional traces of various thorium isotopes in the sampling and transfer equipment vents.

In May 2001, USEC ceased enrichment operations at the Portsmouth GDP. Since then, the enrichment cascade has been in "Cold Standby". USEC is under contract to DOE to maintain the PORTS enrichment cascade in a condition that will allow it to be re-started within 24 months if needed. In addition, some of the equipment is being operated for in situ decontamination.

PORTS also uses a variety of sealed sources for calibration of equipment; however, none of these are released and therefore are not used in the determination of the effective dose equivalent (EDE). Column 1of Table 2.3 lists the radionuclides used in the determination of the EDE.

1.2.2 Monitored and Unmonitored Sources

The sources discussed in this section are the significant or potentially significant contributors to airborne radionuclide emissions from USEC operations.

PORTS reviewed the radiological emission sources on the plantsite and determined that fifteen had the greatest potential for emissions and equipped them with continuous emissions samplers (see Table 1.0). All fifteen are sampled continuously when operating by flow-proportional, isokinetic samplers to provide emissions data. Six of these sources (the purge cascades, the cold recovery systems, and the building wet air evacuation systems) are also monitored in real-time by ionization chamber instruments for operational control. Two more of these sources (the X-343 and X-344 cold trap vents) are monitored in real-time by gamma detectors mounted on the continuous emission samplers for the same purpose. Laboratory analysis of the emissions samples is more sensitive, more accurate, and more reliable than either the ionization chambers or the gamma detectors but cannot provide real-time data required for process control.

Table 1.0 PORTS Monitored Emission Points

Location	Vent Identification Number
X-326 Top Purge Vent	X-326-P-2799
X-326 Side Purge Vent	X-326-P-2798
X-326 Emergency Jet Vent	X-326-P-616
X-326 Seal Exhaust Vent 6	X-326-A-540
X-326 Seal Exhaust Vent 5	X-326-A-528
X-326 Seal Exhaust Vent 4	X-326-A-512
X-330 Seal Exhaust Vent 3	X-330-A-279
X-330 Seal Exhaust Vent 2	X-330-A-262
X-333 Seal Exhaust Vent 1	X-333-A-851
X-330 Cold Recovery/Building Wet Air Evacuation Vent	X-330-A-272
X-333 Cold Recovery Vent	X-333-P-852
X-333 Building Wet Air Evacuation Vent	X-333-P-856
X-343 Cold Trap Vent	X-343-P-468
X-344 Gulper Vent	X-344-P-929
X-344 Cold Trap Vent	X-344-P-469

1.2.2.1 Monitored Sources

Top and Side Purge Cascades

The two purge cascades continuously separate light gases from process gas (UF_6) using gaseous diffusion. The separated process gas is returned to the main cascade from the tail of the purge cascades. The light gases are split at the head of the purge cascades with enough "lights" being recycled to the main cascade to maintain normal operating flows and the balance being vented through chemical adsorbent traps to the atmosphere. The Side Purge Cascade and Top Purge Cascade operate in series at the very head of the main cascade. For operational control, each of the two purge cascades is monitored separately with real-time instruments called "space recorders".

Operation of the purge cascades is required for continued operation of the main process cascade. Consequently, the two purge cascades are exhausted by three interconnected air jet eductors. The third eductor (Emergency Jet or E-Jet) is an operating spare for either or both regular eductors. The eductors are interconnected to a set of four exhaust pipes. The pipes extend up a 50-meter freestanding tower to remove the emissions from the X-326 Process Building's wind wake. For compliance purposes, each of the three eductors is fitted with separate continuous samplers.

The Top Purge Cascade continues to operate to support the in-situ decontamination activities mentioned above. The Side Purge Cascade is in standby with its associated eductor valved off. The Side Purge Cascade will eventually be restarted for decontamination of its own equipment. The E-Jet has continued to operate as needed, but has been needed only sporadically since May 2002. Both purge cascades and all three eductors remain available for use if needed.

Seal Exhaust Stations

The seal exhaust (SE) stations maintain a vacuum within cascade compressor shaft seals to prevent inleakage of wet air to the cascade. This vacuum is isolated from the compressor side of the seal by a buffer zone. Gases evacuated from the seals are pulled through chemical adsorbent traps by a bank of manifolded vacuum pumps and exhausted to the atmosphere through mist eliminators (for pump oil) and a roof vent. There is one seal exhaust station in each of the cascade's six "areas", each being located adjacent to an area control room (ACR).

All of the seal exhaust stations continue to operate to support the in-situ decontamination activities.

Cold Recovery Systems

The cold recovery systems are intermittently operated maintenance support systems used to prepare cascade equipment (cells) for internal maintenance. Process gas in cascade cells scheduled for maintenance is first evacuated to adjacent cascade cells to the extent practical. The cell is then sealed off and alternately purged with dry nitrogen and evacuated to the Cold Recovery System. The evacuated gases pass through chilled cylinders called "cold traps" to solidify any residual process gas. The non-condensable nitrogen carrier is passed through chemical adsorbents for polishing and then is vented by an air jet eductor to the atmosphere. Periodically, individual cold traps are valved off from the vent, and the trapped UF_6 is returned to the cascade by vaporization. There are two cold recovery systems operated at PORTS with one each in the X-330 and X-333 Process Buildings. In X-330, the cold recovery system shares a common vent and vent sampler with the building wet air evacuation system.

Both of the Cold Recovery Systems continue to operate to support the in-situ decontamination activities.

Building Wet Air Evacuation Systems

The building wet air evacuation systems are intermittently operated maintenance support systems used to prepare off-line cascade cells for return to service. The cell is sealed off and alternately purged with dry nitrogen and evacuated to remove all outside air and moisture from the cell. The evacuated gases are passed through chemical adsorbents to catch residual radionuclides (if any) and vented to the atmosphere by an air jet eductor. There are two building wet air evacuation systems, one associated with each of the cold recovery systems described above. In X-330, the cold recovery and building wet air evacuation systems share a common vent and sampler.

Both of the Building Wet Air Evacuation Systems continue to operate to support the in-situ decontamination activities.

Shipping and Transfer Cold Trap Areas

Under PORTS' historic configuration, autoclaves in the X-343 facility vaporized UF_6 in 14-ton cylinders to provide feed material for the enrichment cascade. Autoclaves in the X-344 facility liquefied enriched UF_6 in 14-ton or 10-ton cylinders for quality control sampling and transfer to 2.5-ton cylinders for shipment to customers. Residual gases evacuated from the autoclave process piping were returned to the cascade.

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process included filtering the liquid UF_6 through chemical absorbents ("tech traps") to remove residual ^{99}Tc. In June 2002, all enriched material handling was consolidated at the Paducah GDP and the X-343 and X-344 facilities were dedicated to filtering ^{99}Tc from out-of-specification UF_6 feedstock before it was enriched.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but have been out of service since the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

X-344A Manifold Evacuation/Gulper

The X-344A Toll Transfer Facility contains an automated sampling and transfer system for sampling the product and for filling customer cylinders with low assay UF_6. The term "assay" refers to the concentration of ^{235}U in weight percent. To avoid cross contamination between samples and to prevent emissions to the air, the sampling and transfer manifold was formerly evacuated back to the diffusion cascade through a line to the X-342 Feed Vaporization and Fluorine Generation Building and, since May 2001, to the X-344 Cold Trap System. In the event of a trace release occurring in spite of the purge and evacuation procedure, a "gulper" is mounted behind the manifold-to-cylinder connections. The gulper is simply a continuous vacuum nozzle, similar in principal to a lab hood, which draws any small releases from the room air into a filtration system. The filtration system has two filter banks, each consisting of a roughing filter followed by high efficiency particulate air (HEPA) filters and a centrifugal blower.

1.2.2.2 Unmonitored and Potential Sources

PORTS has several unmonitored minor and potential emission sources associated with USEC process support activities. Based on process knowledge and historical ambient monitoring data, none of these sources are believed to contribute significantly (i.e. in excess of 1% of the USEPA standard) to plant radionuclide emissions under normal operations.

The minor sources, as the term is used at PORTS, have some trace radionuclides in their routine emissions but only in negligible amounts under normal operating conditions. The potential sources are primarily room ventilation exhausts and/or pressure relief vents from areas that have a potential for an internal radionuclide release.

Since 1995, PORTS has included emissions estimates from unmonitored sources in the calculation of the EDE. As required by NESHAP regulations, these estimates were updated for the 2000 and later calculations.

X-705 Decontamination Facility

Equipment that is removed from the PORTS cascade is sealed at the point of removal and transported to the X-705 Decontamination Facility. Small parts are cleaned in "hand tables" or spray tanks, while large parts are sent through an automated "tunnel." The hand tables consist of shallow acid baths (either nitric or citric depending on the metal to be cleaned) where metal parts are decontaminated by passive soaking. The hand tables have fume hoods over them to protect workers from acid fumes. The spray tanks are enclosed tanks where equipment can be cleaned remotely. Pressure relief vents are standard on such equipment. The tunnel is an enclosed series of "booths" that decontaminate large parts by spraying with decontamination solutions (acids and water rinses) as a small rail car carries the parts through the tunnel. The tunnel is ventilated to prevent a buildup of acid fumes. In all cases, radionuclides (uranium and technetium) are dissolved in the liquid phase and collected for recovery of the uranium. None of the radionuclides are volatilized through normal operation of these facilities and only trace radionuclides carried by entrained droplets would be expected.

The X-705 facility has seen minimal use since the end of enrichment operations, but is still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Calciners

Decontamination solutions are treated to yield a concentrated aqueous solution of uranyl nitrate, which is converted into uranium oxide powder in one of three calciners located in the X-705 Decontamination Facility. A calciner consists of an inclined heated tube with the uranyl nitrate solution entering at the top and air entering at the bottom. The uranium is first dried and then oxidized as it passes down the tube. The uranium oxide powder is collected directly into a five-inch diameter storage can at the lower end of the calciner tube. The gaseous stream leaves the upper end of the calciner and is exhausted through a scrubber for NO_x control. Uranium is recovered from the spent scrubber solution through a microfiltration process and the effluent is discharged to a National Pollutant Discharge Elimination System permitted outfall. Turbulence and flow rates through the calciners are controlled to minimize blowback of the uranium oxide. Any blowback that does occur is entrapped by the entering uranium solution.

The calciners have seen minimal use since the end of enrichment operations, but are still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Glove Boxes

The five-inch can that collects the uranium oxide powder from each calciner is housed in a glove box to prevent the loss of the material. In addition, there is a separate glove box which is used for sampling the material in the can. The glove boxes have air locks for the entry and removal of work materials and are maintained under negative pressure during use. This negative pressure is produced by an exhaust fan drawing through a HEPA filter.

Like the calciners, the gloveboxes have seen minimal use since the end of enrichment operations, but are still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Storage Tank Vents

Uranium-bearing solutions awaiting treatment are stored in a manifold of five-inch diameter tanks inside the X-705 facility. All of these tanks are manifolded to a common pressure relief vent that has some potential to release radionuclides if the tanks are overfilled or overheated. Normal emissions should be zero since the stored liquids are quiescent, the dissolved radionuclides are non-volatile, and the vents are not open except during filling.

Emissions estimates from sources in the X-705 Decontamination Facility are included in the EDE calculations. Emissions from X-705 were modeled as a single source. The emissions from X-705 were estimated using the factors given in the Code of Federal Regulations, Title 40, Part 61, Appendix D, and are extremely conservative.

Laboratory Fume Hoods

Laboratory analysis of process and other samples is performed in the PORTS on-site laboratory in accordance with standard laboratory practices. There are no emissions controls on the lab hoods used in these procedures. The hoods should not exhibit any measurable radionuclide emissions during normal operation. Small amounts of technetium are partially volatilized by the analytical method approved by the Environmental Protection Agency under the Safe Drinking Water Act. There is also a possibility of a UF_6 sample container bursting during processing. This is an extremely rare occurrence, however, and cannot be regarded as normal operation as specified in the NESHAP regulations. Most laboratory fume hoods are located in the X-710 Laboratory. There are two fume hoods in the X-760 Chemical Engineering Building which operates as an adjunct to the X-710 Laboratory. These hoods were formerly used to prepare environmental samples such as soil, water, air, and vegetation samples for analysis in the X-710 Laboratory. The level of radionuclides in these samples is extremely low as evidenced by the analytical results. The X-705 Decontamination Facility has a small laboratory which contains three fume hoods which are used to prepare samples and analyze materials being processed in the building.

Emissions from the X-710 Laboratory were estimated using the 40 CFR 61 Appendix D method. These estimates were included in the source term for the dose modeling using CAP88. The emissions from the X-710 were modeled as a single source.

The X-710 Laboratory expected to start accepting analytical work for other entities under a Radioactive Material License from the State of Ohio in 2002. Due to administrative issues, this has not happened.

XT-847 Glove Box

The XT-847 Glove Box is a large stainless steel glove box which is used to batch small quantities of radioactively contaminated waste for more efficient and less costly storage, shipment, and disposal. The glove box is used primarily to batch spent alumina and other adsorbents used in control traps on process vents. When the adsorbent is removed from use, it is placed in a safe geometry container (5", 8" or 12" diameter, depending on assay). The material is then analyzed, and if the assay meets nuclear criticality safety limits, it is batched into larger containers including, but not limited to, 55 gallon drums. Other radiological materials may also be handled in the glove box.

Room Air Exhausts

Several uranium handling areas within the plant buildings have some potential for releasing minute ($\leq$1 gram) amounts of UF_6 into the room air. Releases of this size are characterized as small releases (visually resembling a puff of cigarette smoke). However, it should not be implied that any size release is acceptable or overlooked by PORTS. Studies conducted in the early 1980s demonstrated that a release of one gram of UF_6 produces a much larger release (smoke cloud) than what is normally observed during the operations discussed here. Ventilation exhausts from, and worker protection within these areas, are controlled according to the probability of releases occurring.

Standard policy in the event of a release is to evacuate the area and remotely close down the local ventilation for confinement and subsequent decontamination.

Material feed and withdrawal areas occasionally have small releases when disconnecting UF_6 containers from process piping. These areas include the X-342A Feed and Fluorine Generation Facility, the X-343 Feed Facility, the X-344A Toll Transfer Facility, the X-330 Tails Withdrawal Area, the X-333 Low Assay Withdrawal Area, and the X-326 Extended Range Product and X-326 Product Withdrawal Areas. These areas have dedicated ventilation exhausts for worker protection but no emission controls or continuous vent monitors (except at the X-344A Toll Transfer Facility). The plant's Health Physics (HP) Department samples the air inside these areas for worker protection. The HP data indicates the average radionuclide concentrations inside the room are typically equivalent to natural background and, based on this, emissions from the room can be presumed to be environmentally insignificant.

The highest probability of internal releases besides the X-344A Sampling/Transfer Area, which was discussed in the previous section, is in the X-705 Decontamination Facility South Annex, where contaminated equipment is unsealed and disassembled. The South Annex has a separate HEPA filtered ventilation system and operates as a sealed area. Supplied air respirators are mandated for worker protection within the annex when the facility is in use. Normal emissions to the outside air should be negligible, which is consistent with past ambient monitoring performed by the plant's HP Department.

The "cell floors" of the process buildings are subject to a lesser potential for unplanned releases when cascade components are being serviced or removed. Special worker protection ventilation systems for the cell floors are not considered necessary for several reasons, including the huge volume of air passing through the general ventilation systems (approximately 4,000 process motors are air-cooled by the general ventilation system) and the lower potential for a release. The cell floor air is sampled by the HP Department. The same results found in the material withdrawal areas are seen on the cell floor. Routine emissions levels from process building ventilation should be equal to natural background levels.

SECTION 2.0 AIR EMISSIONS DATA

Table 2.0 and Table 2.1 summarize the control device information for each source and give the distance and direction from each source to the nearest resident, school, office or business, and vegetable, meat, and milk-producing farms.

Table 2.0 Point Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-326 Top Purge, Side Purge & E-jet (Cascades) (3 monitors)[b]	Chemical Adsorbents	0-95%[c]	1370 SE	5000 NNW	1520 SSE	4290 N	1370 E	8660 ENE
X-330 Cold Recovery/Wet Air Evacuation Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1690 ESE	3930 NNW	1370 W	3200 N	1520 ESE, W	8380 ENE
X-333 Cold Recovery Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-333 Wet Air Evacuation Vent	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-326 Seal Exhaust Area 6	Chemical Adsorbents	0-95%[c]	1430 E	4880 NNW	1620 SSE	4180 N	1340 E	8630 ENE
X-326 Seal Exhaust Area 5	Chemical Adsorbents	0-95%[c]	1460 E	4630 NNW	1540 WNW	3940 N	1340 E	5830 ENE
X-326 Seal Exhaust Area 4	Chemical Adsorbents	0-95%[c]	1500 ESE	4420 NNW	1460 WNW	3720 N	1340 E	8470 ENE

See notes on page 13.

Table 2.0 Point Sources, continued

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-330 Seal Exhaust Area 3	Chemical Adsorbents	0-95%[c]	1620 E	4080 NNW	1400 W	3360 N	1430 E	8400 ENE
X-330 Seal Exhaust Area 2	Chemical Adsorbents	0-95%[c]	1725 ESE	3690 NNW	1430 WSW	3020 N	1580 SE, W	8320 ENE
X-333 Seal Exhaust Area 1	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-343 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1070 ESE	3980 NW	2130 WSW	2980 N	1040 SSE	7620 ENE
X-344A Manifold Evacuation/ Gulper	HEPA Filters	99.97%	1830 ESE	3410 NNW	1460 WSW	2680 N	1830 SSE	8320 ENE
X-344 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1870 ESE	3380 NNW	1440 WSW	2660 N	1860 SSE	8340 ENE
XT-847 Glove Box	HEPA Filters	99.97%	640 SSW	5840 N	980 SE	5150 N	1300 S	9150 ENE

See notes on page 13.

Table 2.1 Grouped Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-705 Calciners (3)	Wet Scrubber	75%[e]	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-710 Laboratory Fume Hoods (39)	None	N/A	1260 E	4690 NNW	1660 WNW	3930 N	1130 E	8350 ENE
X-705 Decontamination Facility	One area HEPA Others none	99.97% N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-705 Storage Tank Vents	None	N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-700 Cleaning Building	HEPA Filters	99.97%	1220 ESE	3910 NNW	1910 W	3200 N	930 E	7840 ENE
X-720 Maintenance Facility	None	N/A	1220 E	4250 NNW	1800 W	3430 N	1010 E	7880 ENE
Room Air Exhausts	None	N/A	850 ESE	3410 NNW	1370 W	2680 N	760 SE	7560 ENE

See notes on page 13.

	Notes to Tables in Section 2.0
a	All sources in Table 2.0 have continuous vent monitors except the XT-847 Glove Box.
b	The Top and Side Purge Cascade vent streams pass separately through activated alumina traps. A third line, the Emergency Jet, connects to both lines through block valves. All three lines have continuous samplers. The three vent lines connect to four exhaust pipes that extend above the 50-meter tower. The Top Purge jet is vented directly through one pipe. The Side Purge Jet and Emergency Jet lines are interconnected to the other three pipes.
c	Chemical adsorbents (such as activated alumina and sodium fluoride) are approximately 95 percent effective at concentrations above 1 ppm. Below this concentration, chemical adsorbents have reduced efficiency or no effect. Normal concentrations entering the Purge Cascade Chemical Traps are near or below 1 ppm. The sample traps (which follow the control traps) use activated alumina hydrated to 14 percent moisture content, which is much more effective due to an instantaneous reaction of gaseous UF_6 and Tc with the water to form particulate matter.
d	Based on process knowledge, cold traps are estimated to be approximately 90 to 95 percent effective in trapping gaseous UF_6.
e	Scrubber efficiency is estimated to be approximately 75 percent but has not been rigorously measured. Normal emissions from the source are estimated to be negligible compared to monitored sources (<0.001 curies of uranium).

2.1 Radionuclide Emissions from Point Sources

The CAP88 model allows up to six sources to be modeled at one time, but assumes that all sources are located at the origin of the same circular grid. Therefore, PORTS modeled its emissions as three co-located stacks sited at the actual location of the predominant source, the X-326 Tall Stack, up to 1995. From 1995 through 1997, USEC modeled its emissions from PORTS as nine individual release points at nine different locations to ensure that the impact of estimated emissions from grouped sources close to the downwind site boundary was not underestimated. This required nine different model runs that had to be combined manually, however.

In 1998, after consultation with USEPA-Region 5, the nine sources were grouped into three source groups which were modeled as being co-located with the predominant source within each group. The source terms from the lesser sources in each group are typically an order of magnitude lower than the source term from the predominant source in that same group. In 2000, a tenth source (the XT-847 Glove Box Exhaust) was added to the list. In 2001, two more sources were added (the Cold Trap Vents in X-343 and X-344). See Table 2.2 for a description of the emission points for each modeled source.

Group 1 now includes the X-326 Tall Stack, all other X-326 vents, the X-710 Laboratory vents and the XT-847 Glove Box Exhaust; these sources were modeled from the location of the X-326 Tall Stack. Group 2 includes the X-330, X-333, X-343, and X-344 vents; these were modeled from the location of X-333 Area 1 Seal Exhaust Vent. Group 3 includes the X-700, X-705, and X-720 building vents; these were modeled from the middle of the X-705 Building.

The individual source terms and stack characteristics for each of the twelve sources are provided in Table 2.3 and Table 3.0 of this report.

Table 2.2 Grouping of USEC Vents for Modeling

Source	Consists of	Modeled with Source
1	X-326 Top Purge Vent, Side Purge Vent and Emergency Jet Vent	1
2	X-326 Extended Range Product emissions, SE 6 Vent, SE 5 Vent and SE 4 Vent	1
3	X-330 Building Cell Evacuation/Cold Recovery Vent, SE 3 Vent and SE 2 Vent	4
4	X-333 Low Assay Withdrawal, Cold Recovery Vent, Building Wet Air Evacuation Vent, and SE 1 Vent	4
5	X-344 Gulper Vent	4
6	All X-700 vents	7
7	All X-705 vents	7
8	All X-710 vents	1
9	All X-720 vents	7
10	XT-847 Glove Box	1
11	X-343 Cold Trap Vent	4
12	X-344 Cold Trap Vent	4

Table 2.3 Releases (in Curies) During CY 2002

NUCLIDE	USEC Sources												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
^{234}U	1.42E-04	5.98E-05	2.50E-04	1.82E-04	3.99E-05	0	8.65E-03	8.07E-03	1.07E-06	1.81E-05	4.46E-03	1.33E-04	2.20E-02
^{235}U	1.63E-05	4.54E-06	1.58E-05	2.12E-05	6.14E-06	0	2.90E-04	2.71E-04	3.59E-08	6.06E-07	1.74E-04	7.24E-06	8.07E-04
^{238}U	3.34E-06	6.31E-06	5.54E-05	4.09E-05	1.03E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	7.75E-04	9.82E-05	2.35E-03
^{99}Tc	3.68E-03	3.54E-03	3.42E-03	3.52E-03	8.04E-04	0	1.94E-03	1.81E-03	0	2.81E-04	1.20E-03	1.16E-03	2.14E-02
^{228}Th	0	0	0	0	0	0	0	0	0	0	6.52E-08	3.61E-08	1.01E-07
^{230}Th	0	0	0	0	0	0	0	0	0	0	1.88E-08	7.10E-08	8.98E-08
^{231}Th	1.63E-05	4.54E-06	1.57E-05	2.12E-05	6.14E-06	0	2.90E-04	2.71E-04	3.59E-08	6.06E-07	1.74E-04	7.24E-06	8.07E-04
^{232}Th	0	0	0	0	0	0	0	0	0	0	1.17E-08	0	1.17E-08
^{234}Th	3.34E-06	6.31E-06	5.54E-05	4.09E-05	1.03E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	7.75E-04	9.82E-05	2.35E-03
^{234m}Pa	3.34E-06	6.31E-06	5.54E-05	4.09E-05	1.03E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	7.75E-04	9.82E-05	2.35E-03

Notes:

1. Sources 6 and 9 (X-700 & X-720) do not routinely process technetium. Equipment going to these buildings is first decontaminated in X-705 to strip all removable contamination. Therefore, emissions of Tc are estimated to be zero.

2. Source 6 is not known to have processed any removable uranium during 2002. Therefore, all uranium and uranium daughter emissions from this building are estimated to be zero.

2.2 Radionuclide Emissions from Fugitive and Diffuse Sources

There were no significant emissions of radionuclides from diffuse or fugitive sources at PORTS due to USEC operations.

PORTS maintains a network of ambient air monitors around the plantsite which continuously sample for particulate radionuclides. In June of 1995, DOE formally transferred ownership and operational control of the ambient air monitoring network to USEC. On October 1, 2000, USEC returned ownership and control of the ambient air monitoring network to DOE, which upgraded the samplers and is using them in their own public dose assessment program.

SECTION 3.0 DOSE ASSESSMENT

3.1 Description of Dose Model

The radiation dose calculations were performed using the CAP88 package of computer codes. This package contains USEPA's most recent version of the AIRDOS-EPA computer code. This program implements a steady-state, Gaussian plume, atmospheric dispersion model to calculate environmental concentrations of released radionuclides. It also includes Regulatory Guide 1.109 food chain models to calculate human exposure, both internal and external, to radionuclides deposited in the environment. The human exposure values are then used by USEPA's latest version of the DARTAB computer code to calculate radiation dose to man from the radionuclides released during the year. The dose calculations use dose conversion factors in the latest version of the RADRISK data file, which is provided by USEPA with the CAP88 package.

3.2 Summary of Input Parameters

Except for the radionuclide parameters given in Section 2.0 and those provided below, all important input parameter values used are the default values provided with the CAP88 computer codes and data bases.

Solubility Class: All uranium isotopes:	D
Technetium-99	D
All uranium daughters	W
All other thorium isotopes	W
AMAD:	1 μm
Meteorological data:	2002 data from onsite tower
Rainfall rate:	119.0 cm/year (CY 2002)
Average air temperature:	12.53 °C (CY 2002)
Average mixing layer height:	1000 meters

Fraction of foodstuffs from:	Local Area	Within 50 mi	Beyond 50 mi*
Vegetables and produce	0.700	0.300	0.000
Meat	0.442	0.558	0.000
Milk	0.399	0.601	0.000

*The dose estimate for foodstuffs is very conservative when 0.0 is used as an input parameter in the category of foodstuffs consumed that were produced at a distance of 50 miles or more from the PORTS site. Realistically, it can be assumed that very little of the foodstuffs consumed by residents within a 50-mile radius of PORTS are produced within 50 miles of the PORTS site. The majority of the foodstuffs consumed are purchased at supermarkets that receive foodstuffs from all over the world.

3.3 Source Characteristics

Table 3.0 Source Characteristics

Source	Type	Release Height (m)	Inner Diameter (m)	Gas Exit Velocity (m/s)	Gas Exit Temperature (°C)	Distance to Nearest Individual (m)	Direction to Nearest Individual
1	Point	50	0.25	18.0	35.0	1370	SE
2	Point	20	0.97	24.0	35.0	1430	E
3	Point	20	0.20	61.0	35.0	1620	E
4	Point	20	0.62	29.0	35.0	1330	ESE
5	Point	20	0.36	0.3	23.8	1830	ESE
6	Point	16	0.30	14.0	23.8	1220	ESE
7	Point	14	1.50	12.3	26.7	1330	ESE
8	Point	9	1.00	10.2	26.7	1260	E
9	Point	18	1.19	9.0	23.8	1220	E
10	Point	11	0.406	5.5	35.0	640	SSW
11	Point	33	0.076	9.3	23.8	1070	ESE
12	Point	15	0.35	0.4	23.8	1870	ESE

3.4 Compliance Assessment

In 1996, USEPA directed USEC and DOE to submit separate reports for their areas of responsibility. However, each entity was directed to include the other's dose assessment values in its report in order to show the plant's total effect on the public.

The most exposed member of the public received an EDE of 0.026 mrem/yr (2.6×10^{-4} mSv/yr) from **USEC operations** as calculated by the CAP88 mainframe model. **DOE operations** contributed an additional 4.2×10^{-3} mrem/yr (4.2×10^{-5} mSv/yr) to this individual's EDE for a total of 0.031 mrem/yr (3.1×10^{-4} mSv/yr) from **total plant operations.** This individual was located 2530 meters south-southwest of USEC's predominant emission sources (Source Groups 3). DOE used the CAP88-PC model.

The EDE to the most exposed individual resulting from **DOE operations only** was 0.0046 mrem/yr (4.6×10^{-5} mSv/yr) as determined using CAP88-PC at a location 1114 meters south of DOE's predominant emission source (the X-622 Groundwater Treatment Facility). **USEC operations** contributed an additional 0.021 mrem/yr (2.1×10^{-4} mSv/yr) to this individual's EDE for a total of 0.025 mrem/yr (2.5×10^{-4} mSv/yr) from **total plant operations.** This is **not** the same individual who received the maximum dose from USEC operations due to the predominant emission sources being in different locations. The most exposed individual from DOE operations is located approximately 800 meters west of the most exposed individual from USEC operations along the southern side of the DOE reservation.

The EDE to the most exposed individual resulting from **total plant operations** was 0.031 mrem/yr (3.1×10^{-4} mSv/yr) at a location 2530 meters south-southwest of USEC's predominant emission sources and 1346 meters south-soutwest of DOE's predominant emission source. This is the same individual that received the maximum exposure from USEC operations.

SECTION 4.0 ADDITIONAL INFORMATION

4.1 Collective EDE (Person-Rem/Yr)

The Table 4.0 gives the 50-mile radius EDEs over the past ten years. The EDEs for the most exposed individual are also given for comparison. The collective EDE for persons living in the village of Piketon (~2070 persons) is 0.010 person-rem/yr.

Table 4.0 Annual Doses Due to PORTS (USEC) Airborne Emissions, 1993-2002[1]

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	EPA Std
EDE[2] (mrem/yr)	0.91	0.06	0.13	0.14	0.12	1.69	0.28	0.039	0.052	0.026	10
Collective EDE[3,4]	11.6	0.6	1.2	2.2	1.5	6.4	1.0	0.15	0.18	0.095	N/A

Notes to Table 4.0:

1. EDE values through 1995 are for total plant operations; since 1996, figures are for USEC operations only.

2. The most exposed individual (USEC operations only) in 2002 was located 2530 meters SSW of the X-705 Decontamination Facility.

3. Collective EDE in person-rem/yr for 50-mile radius. This is a summation of the dose to each individual living within a 50-mile radius.

4. Population distributions for calendar year 2001 onward were updated from 2000 census data.

4.2 New/Modified Sources

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process included filtering the liquid UF_6 through chemical absorbents ("tech traps") to remove residual ^{99}Tc.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but have been out of service since the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

During 2002, the sampling and transfer of enriched UF_6 was consolidated at the Paducah GDP and the PORTS facilities dedicated to removing ^{99}Tc from contaminated UF_6 feedstock. Removal of ^{99}Tc contamination was a normal part of the sampling and transfer operation and no physical modifications were required. Technetium releases from the feedstock operation have been negligible (undetectable for the most part) and uranium activity releases have been reduced due to the lower assay being processed (less than one percent U-235 instead of up to five percent).

Since beginning the feedstock operation, however, it has become apparent that thorium and transuranics were also being collected and concentrated in the tech traps. Wipe samples of the process piping indicates that these nuclides are predominately confined to the immediate vicinity of the tech traps, but as a precaution ^{228}Th, ^{230}Th, ^{232}Th, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, and ^{241}Am were added to the weekly analyses for the X-343 and X-344 vent samplers beginning at the end of July. As of the end of 2002, no transuranic isotopes have been detected in vent emissions and those analyses have been returned to their previous frequency. Individual thorium isotopes were detected seven times (out of 150 possible detections) between July and the end of 2002 though.

The annual thorium release is several orders of magnitude less than the uranium release, but these thorium isotopes have a much higher dose response than soluble uranium. Therefore, USEC conducted an analysis of the relative releases and their dose response (based on the stochastic Annual Limiting Intake published in Appendix B to 10 CFR 20). The result indicated that the thorium isotopes would contribute less than four percent of the total public dose even under if assumed emissions at the detection limit were included. This is well under the ten percent standard for inclusion under 40 CFR 61.93(b)(4)(i). The issue was discussed with Mike Murphy and it was decided to include quantifiable thorium emissions in the site's annual dose assessment, but to exclude assumed emissions where no thorium was detected.

A second operational change that was planned for 2002 has been delayed. PORTS has historically disposed of spent tech traps as sealed sources, with up to three sets of tech traps loaded intact into a B-25 box. This wastes over half the volume of the box as void space. To reduce the volume of radioactive waste being generated, PORTS had planned to begin loading the spent absorbents directly into the B-25 boxes and re-using the traps by the end of 2002. However, accumulated activities of the short-lived uranium daughters (^{231}Th, ^{234}Th, and ^{234m}Pa) have generated gamma radiation fields around the traps that are high enough that PORTS chose to store the traps for decay to reduce worker exposures. As a result, no tech traps were emptied in 2002.

Two analytical changes in the vent monitoring system were implemented at the beginning of calendar year 2002. Historically PORTS has routinely analyzed its vent samples for total uranium and ^{235}U by fluorimetry and gamma spectrometry, then estimated ^{234}U and ^{236}U proportions from process sample data. In the event chemical interferences were encountered, alpha spectrometry was used to determine total uranium and ^{235}U in the affected vent samples. Such interferences were being encountered routinely in the X-343 and X-344 Cold Trap Vents. Furthermore, current process data to support calculations of ^{234}U emissions ceased to be available when enrichment operations ended in 2001. Consequently, PORTS has abandoned the fluorimetry/gamma spectrometry method.

Starting with the beginning of calendar year 2002, PORTS has used alpha spectrometry to analyze all vent samples for ^{234}U, ^{235}U, ^{238}U and total uranium. Eventually, PORTS will use either Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) or alpha spectrometry to analyze vent samples for these parameters, depending on which method is most convenient at any given time. Both of these methods are widely recognized and have detection limits as low or lower than the fluorimetry/gamma spectrometry method. In addition, both ICP/MS and alpha spectrometry will directly measure ^{234}U in the vent samples. Reviewing Table 2.3 above shows that ^{234}U accounted for approximately 85 percent of the uranium activity released by USEC operations in 2002 and over three quarters of the public radiation dose. Therefore, directly measuring the ^{234}U in the releases instead of estimating it is in itself a significant improvement. This change was discussed with Mr. Mike Murphy of EPA Region V by telephone and e-mail and in the 2001 report.

The second change that began with the beginning of calendar year 2002 is that PORTS ceased including estimated releases of ^{236}U. The uranium isotope ^{236}U is produced in irradiated reactor fuel and, like ^{99}Tc, is a fuel cycle contaminant introduced in recycled uranium prior to 1975. It was historically detected only in equipment that processed Highly Enriched Uranium. The highest ^{236}U concentration detected since USEC was formed is only 0.002 weight percent of the uranium present. Prior to 2002, PORTS continued to estimate ^{236}U emissions based on cascade concentrations that were normal prior to the formation of USEC. The annual releases reported typically accounted for only 0.002 percent of the total uranium activity and on the order of 0.001 percent of the public radiation dose. Consequently, ^{236}U does not now and is not ever expected to make a measurable contribution to the public radiation dose. This change has also been discussed with Mr. Mike Murphy of EPA Region V by telephone and e-mail.

4.3 Unplanned Releases

No major unplanned releases occurred during calendar year 2002.

Minor releases occurred during attaching and detaching of lines to cylinders or when other anomalous conditions developed. The practice of as low as reasonably achievable (ALARA) is used to shut down the building ventilation system to prevent the release from reaching the atmosphere. Therefore, PORTS feels that the small releases should be considered insignificant.

SECTION 5.0 SUPPLEMENTAL INFORMATION

5.1 Radon Emissions

PORTS does not have and does not expect to have any ^{220}Rn emissions due to ^{232}U or ^{232}Th sources. PORTS does not manage any ^{232}U and consequently does not have any emissions of ^{220}Rn due to ^{232}U decay. Although PORTS does not specifically manage ^{232}Th, some amount is present due to ^{236}U decay and feedstock contamination. ^{236}U is itself a trace component of the uranium managed at PORTS, and its thorium daughter is extremely long-lived (half-life greater than 14 billion years). These figures indicate that no measurable concentrations of ^{220}Rn due to ^{232}Th decay will exist onsite within any foreseeable future.

The uranium processed at PORTS has previously been chemically purified at the mill to remove all naturally occurring elements including ^{226}Ra, which is the precursor of ^{222}Rn. It has been calculated that 10,000 years would be required before detectable levels of ^{222}Rn would occur due to the natural decay process.

5.2 Compliance with NESHAP Subpart H Requirements

During 2002, USEC had continuous emissions monitors (samplers) on fifteen point sources of the 37 point/grouped sources that represent what are believed to be the major emission sources at PORTS. Most of the continuously monitored point sources are not actually subject to the continuous monitoring requirement. USEC believes that all fifteen monitors comply with the requirements of 40 CFR 61.93(b) (i.e., they are equivalent to the EPA reference methods). USEPA-Region 5 conducted a detailed inspection of the stack sampling program during its NESHAP inspections during the weeks of March 15, 1993, and July 22, 1996. Although not explicitly stated in the final inspection reports, USEPA-Region 5 has accepted the stack sampling methodology. USEPA inspections were also conducted in 1994, 1995, 1998, and 2000.

The final 1993 NESHAP inspection report did not address the frequency or the methodology for periodic confirmatory measurements. USEPA has accepted engineering estimates, and USEC has made emissions estimates for all unmonitored radionuclide sources using the methods found in 40 CFR 61, Appendices D and E. Stack tests for radionuclides were made on six sources in 1989, and repeat testing was conducted on one source in 1993 as part of the process for renewal of the source's state air permit. The emissions estimates for all of the unmonitored sources were updated in 2000.

A NESHAP Compliance Plan was submitted by DOE in 1990 to document how PORTS planned to demonstrate compliance with the newly promulgated radionuclide NESHAP regulations in 40 CFR 61, Subpart H. The plan was revised and resubmitted in 1991 and 1992. USEC included continuous ambient air monitoring in its compliance plan to provide supporting evidence that no significant radionuclide emissions had been overlooked in the source monitoring program. However, USEPA-Region 5 never approved the use of ambient air monitoring to demonstrate USEC's compliance with the radiological NESHAP regulations on a continuing basis. The actions described in the plan were completed. On March 16, 1999, USEPA-Region 5 verbally agreed during a telephone conversation (POEF-520-99-038) that the compliance plan could now be considered a historical document.

PORTS has conducted an extensive stack and vent survey. Stacks with a potential to emit radionuclides have been identified and evaluated. See Attachment 1 for a listing of the radionuclide stacks/vents at PORTS.

5.3 Future Facilities

In February 2003, USEC, Inc. submitted a license application to the NRC to build and operate a Centrifuge Lead Cascade at PORTS. The Lead Cascade is to be installed in the existing X-3001 Process Building. Since then, NRC has ruled that the application is complete and has begun its technical review. USEC currently hopes to have a license in hand around February 2004 and to have the Lead Cascade in operation early in 2005.

The Lead Cascade will be a demonstration facility consisting of up to 240 individual centrifuges. The purpose of the Lead Cascade is to generate operability and economic data for a follow-on commercial centrifuge facility. The Lead Cascade will operate on full recycle with no UF_6 being withdrawn except samples for laboratory analysis. The total uranium inventory of the Lead Cascade will be only 250 kg UF6 (less than 0.125 Curies) and the maximum emission rate is predicted to be less than 0.001 Curie per week. Assuming that this emission rate was maintained for an entire year (which would shut down the cascade) the maximum predicted dose to a member of the public would still be only 0.023 mrem/yr. The Lead Cascade will have only one process vent, which will be equipped with a continuous vent monitor similar to the ones currently used on the X-343 and X-344 vents.

Attachment 1
PORTS 2002 Potential and Actual Radiological Emissions Point Sources
(To USEC Air Emissions Annual Report [Under Subpart H, 40 CFR 61.94] Calendar Year 2002).

STACK NUMBER	DESCRIPTION
X-326-A-512	Seal Exhaust Vent Area 4
X-326-A-540	Seal Exhaust Vent Area 6
X-326-A-528	Seal Exhaust Vent Area 5
X-326-B-284	ERP Withdrawal Room Vent
X-326-P-2798	S-Jet Exhaust - Purge Cascade
X-326-P-2799	T-Jet Exhaust - Purge Cascade
X-326-P-616	E-Jet Exhaust - Purge Cascade
X-330-A-079	Tails Withdrawal Room Exhaust
X-330-A-262	Seal Exhaust Vent Area 2
X-330-A-272	X-330 Cold Recovery/Building Wet Air Evacuation Vent
X-330-A-279	Seal Exhaust Vent Area 3
X-330-P-3020	X-330 Building Wet Air Evacuation System (Inactive)
X-333-A-832	Low Assay Withdrawal (LAW) Seal Exhaust Vent
X-333-A-851	Seal Exhaust Vent Area 1
X-333-A-852	X-333 Cold Recovery Vent
X-333-P-856	X-333 Building Wet Air Evacuation Vent
X-333-B-862	LAW Station Room Exhaust
X-342A-A-974	Autoclave Exhaust
X-343-B-1015	Exhaust Fan AJ 108
X-343-P-1011	Autoclave Air Ejector
X-343-P-468	Cold Trap Vent
X-343-P-964	Air Jet
X-343-P-997	Autoclave Housing Relief Vent
X-343-P-998	Autoclave Housing Relief Vent
X-343-P-999	Autoclave Housing Relief Vent
X-344-B-956	Room Air Over Maintenance Shops
X-344-P-929	Gulper Exhaust

STACK NUMBER	DESCRIPTION
X-344-P-469	Cold Trap Vent
X-344A-A-937	Air Ejector
X-700-A-1032	Large Parts Shot Blaster
X-700-A-1037	X-700 Rad Calibration Lab Fume Hood
X-700-A-1043	Converter Repair Station
X-700-A-1053	Small Parts Glass Blaster
X-705-A-1348	Fume Hood
X-705-A-1426	X-705 Gulper System
X-705-A-2813	Small Cylinder Cleaning Unit
X-705-B-1369	Recovery Room Vent
X-705-B-1372	Uranium Solution Storage Vent
X-705-B-1379	Dissolver Storage Columns
X-705-B-1384	Compressor Dismantling Area
X-705-B-2810	Small Cylinder Pit Hood Exhaust
X-705-B-2811	Blue Room
X-705-B-2826	Complexing Hand Table Hood
X-705-B-3091	South Annex Exhaust
X-705-P-1353	X-705 "B" Loop Storage Slabs
X-705-P-1354	X-705 "A" Loop Storage Slabs
X-705-P-1361	T-Water Storage Columns
X-705-P-1364	Bi Uranyl Nitrate Storage Column
X-705-P-1366	Heavy Metals Storage Columns
X-705-P-1375	Caustic Precipitation Handtable Exhaust
X-705-P-1377	Air Jet Recovery
X-705-P-1382	Alumina Filter Tables
X-705-P-1404	Tunnel Vent Fan
X-705-P-1406	Nitric Acid Booth
X-705-P-1422	X-705 Calciner Glove Box
X-705-P-1424	Uranium Sampling & Blending Glove Box

STACK NUMBER	DESCRIPTION
X-705-P-1950	X-705 North Spray Tank
X-705-P-1951	High Assay Parts Cleaning Tables
X-705-P-1952	Group I Hand Table
X-705-P-1953	Small Parts Pit Cleaning Area
X-705-P-1954	Handtable
X-705-P-1960	Ion Exchange Vent
X-710-B-1655	EF 101 Room 111 Lab Hood
X-710-B-1656	EF 122 Room 120 Lab Hood
X-710-B-1657	EF 102 Room 111 Lab Hood
X-710-B-1658	EF 103 Room 111 Lab Hood
X-710-B-1659	EF 123 Room 120 Lab Hood
X-710-B-1661	EF 104 Room 111 Lab Hood
X-710-B-1666	EF 124 Room 120 Lab Hood
X-710-B-1667	EF 106 Room 111 Lab Hood
X-710-B-1668	EF 107 Room 111 Lab Hood
X-710-B-1669	EF 125 Room 120 Lab Hood
X-710-B-1671	EF 108 Room 111 Lab Hood
X-710-B-1673	EF 112 Room 111 Lab Hood
X-710-B-1674	EF 109 Room 111 Lab Hood
X-710-B-1675	EF 126 Room 120 Lab Hood
X-710-B-1676	EF 110 Room 111 Lab Hood
X-710-B-1677	EF 111 Room 111 Lab Vent
X-710-B-1679	EF 127 Room 120 Lab Hood
X-710-B-1681	EF 113 Room 111 Lab Hood
X-710-B-1682	EF 128 Room 120 Lab Hood
X-710-B-1685	EF 114 Room 111 Lab Hood
X-710-B-1686	EF 115 Room 111 Lab Hood
X-710-B-1687	EF 129 Room 120 Lab Hood
X-710-B-1688	EF 116 Room 111 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1692	EF 6 Room 112 Room Vent
X-710-B-1693	EF 117B Room 111 Lab Hood
X-710-B-1694	EF 130 Room 120 Lab Hood
X-710-B-1696	EF 234 Room 240 Lab Hood
X-710-B-1697	EF 117A Room 111 Lab Hood
X-710-B-1698	EF 118 Room 111 Lab Hood
X-710-B-1701	EF 274 Room 240 Lab Hood
X-710-B-1703	EF 167 Room 114 Lab Hood
X-710-B-1706	EF 235 Room 240 Lab Hood
X-710-B-1707	EF 166 Room 114 Lab Hood
X-710-B-1710	EF 275 Room 241 Lab Hood
X-710-B-1711	EF 119 Room 114 Lab Hood
X-710-B-1719	EF 120 Room 115 Lab Hood
X-710-B-1724	EF 238 Room 243 Lab Hood
X-710-B-1732	EF 128 Room 115 Lab Hood
X-710-B-1733	EF 133 Room 128 Lab Hood
X-710-B-1744	EF 223 Room 229 Lab Hood
X-710-B-1747	EF 225 Room 229 Lab Hood
X-710-B-1749	EF 228 Room 229 Lab Hood
X-710-B-1750	EF 229 Room 229 Lab Hood
X-710-B-1751	EF 227 Room 229 Lab Hood
X-710-B-1753	EF 230 Room 229 Lab Hood
X-710-B-1757	EF 239 Room 243 Lab Hood
X-710-B-1758	EF 240 Room 243 Lab Hood
X-710-B-1759	EF 241 Room 243 Lab Hood
X-710-B-1761	EF 270 Room 238 Lab Hood
X-710-B-1779	EF 265 Room 285 Lab Hood
X-710-B-1789	EF 256 Room 263 Lab Hood
X-710-B-1803	EF 162 Room 157 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1805	EF 161 Room 142 Lab Hood
X-710-B-1808	EF 159 Room 156 Lab Hood
X-710-B-1810	EF 158 Room 156 Lab Hood
X-710-B-1811	EF 157 Room 156 Lab Hood
X-710-B-1814	EF 156 Room 156 Lab Hood
X-710-B-1821	EF 143 Room 138 Lab Hood
X-710-B-1822	EF 142 Room 138 Lab Hood
X-710-B-1823	EF 199 Room 138 Lab Hood (AA Unit, has HEPA filter)
X-710-B-1825	EF 141 Room 138 Lab Hood
X-710-B-1830	EF 140 Room 135 Lab Hood
X-710-B-1832	EF 139 Room 135 Lab Hood
X-710-B-1836	EF 138 Room 135 Lab Hood
X-710-B-1838	EF 137 Room 135 Lab Hood
X-710-B-1841	EF 136 Room 135 Lab Hood
X-710-B-1847	EF 134 Room 135 Lab Hood
X-710-B-1849	EF 135 Room 135 Lab Hood
X-720-A-1874	Grit Blasting Room
X-720-A-1545	Motor Shop Steam Cleaning Booth
X-720-A-1904	X-720 Burn Off Oven
X-720-B-1515	Sample Bottle Exhaust
XT-847-B-3102	XT-847 Glove Box

Attachment 2

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and a complete representation of the emissions under United States Enrichment Corporation's control. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment (see 18 U.S.C. 1001).

Name: Patrick D. Musser
General Manager

Signature: P D Musser

Date: 6/20/03

United States Enrichment Corporation (USEC)
Air Emissions Annual Report
(Under Subpart H, 40 CFR 61.94)
Calendar Year 2003

Site Name:	Portsmouth Gaseous Diffusion Plant
Operator:	United States Enrichment Corporation
Address:	Post Office Box 628, Mail Stop 9030 3930 U.S. Route 23 South Piketon, Ohio 45661
Contact:	T. Michael Taimi
Phone:	(301) 564-3409
Owner:	U.S. Department of Energy

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SECTION 1.0 FACILITY INFORMATION

1.1 Site Description

The Portsmouth Gaseous Diffusion Plant (PORTS) is owned by the Department of Energy (DOE). PORTS was operated by DOE until July 1, 1993. In 1992, Congress passed legislation amending the Atomic Energy Act of 1954 (the Act) to create the United States Enrichment Corporation, a government corporation, to operate the uranium enrichment enterprise in the United States. The government corporation began operation on July 1, 1993. In accordance with the Act, the United States Enrichment Corporation leased the production facilities at PORTS and its sister plant at Paducah, Kentucky from DOE. DOE retained operational control of most waste storage and handling facilities as well as all sites undergoing environmental restoration. In keeping with the Act, on July 28, 1998, the U.S. Department of the Treasury sold the uranium enrichment enterprise through an Initial Public Offering (IPO). USEC, Inc. officially became a private corporation on that date. The Portsmouth and Paducah gaseous diffusion plants are operated by a subsidiary of USEC, Inc., the United States Enrichment Corporation (USEC). In May 2001, USEC ceased uranium enrichment operations at PORTS. USEC continues to operate transfer facilities and certain support facilities at PORTS for the purpose of removing technetium (Tc) from off-specification uranium hexafluoride (UF_6) feed material. USEC also continues to maintain the enrichment cascade in a standby condition under contract to DOE.

The PORTS site is located in sparsely populated, rural Pike County, Ohio, on a 16.2-km^2 (6.3-$mile^2$) site about 1.6 km (1 mile) east of the Scioto River Valley at an elevation of approximately 36.6 m (120 ft) above the Scioto River floodplain. The terrain surrounding the plant, except for the Scioto River floodplain, consists of marginal farmland and densely forested hills. The Scioto River floodplain is farmed extensively, particularly with grain crops such as corn and soybeans.

Pike County has a generally moderate climate. Winters in Pike County are moderately cold, and summers are moderately warm and humid. The precipitation is usually well distributed with fall being the driest season. Prevailing winds at the site are out of the southwest to south. Average wind speeds are about 5 mph (8 km/h) although winds of up to 75 mph (121 km/h) have been recorded at the plantsite. Usually, high winds are associated with thunderstorms that occur in spring and summer. Southern Ohio lies within the Midwestern tornado belt, although no tornados have struck the plantsite to date.

Pike County has approximately 27,695 residents (2000 census data). Scattered rural development is typical; however, the county contains numerous small villages such as Piketon, Wakefield, and Jasper, which lie within a few kilometers of the plant. The county's largest community, Waverly, is about 19 km (12 miles) north of the plantsite and has a population of approximately 4,433 residents. Additional population centers within 80 km (50 miles) of the plant are Portsmouth (population 20,909), Chillicothe (population 21,796), and Jackson (population 6,184). The total population of the area lying within an 80-km (50-mile) radius of the plant is approximately 669,000.

USEC is responsible for the principal site process and support operations. Until May 2001, the principal site process was the separation of uranium isotopes through gaseous diffusion. From then until June 2002, the principal site process was quality control sampling, packaging and shipping of uranium enriched elsewhere. A normal part of the packaging process was the removal of residual technetium-99 (^{99}Tc) with chemical absorbents. In June 2002, the transfer and sampling facilities were dedicated to removing ^{99}Tc from UF_6 feedstock prior to enrichment. In addition, USEC is continuing to decontaminate some of the enrichment equipment in situ and is maintaining the gaseous diffusion process equipment in "cold standby" under contract to the DOE.

Support operations include the withdrawal of material from the decontaminated process equipment, treatment of water for both potable and cooling purposes, steam generation for heating purposes, decontamination of equipment either in situ or removed from the process, recovery of uranium from various waste materials, and treatment of industrial wastes generated onsite. DOE is responsible for operations such as the X-326 "L-Cage" and its glove box, the X-345 High Assay Sampling Area (HASA), and site remediation activities. Because of the separation of responsibilities, DOE and USEC are submitting separate annual NESHAP reports and are certifying only those activities for which they have direct responsibility. The following section is a description of USEC's emissions sources.

1.2 Source Description

1.2.1 Radionuclides Used at the Facility

As discussed above, the principal site process was the separation of uranium isotopes as UF_6 until May 2001 and is the sampling and handling of UF_6. Large quantities of UF_6 are located on the site. From May 2001 until June 2002, UF_6 enriched in the ^{235}U isotope was received from the Paducah Gaseous Diffusion Plant located in Paducah, Kentucky for quality control sampling, transfer into customer-owned containers and shipment to customers. Since June 2002, unenriched UF_6 from both the Paducah and PORTS stockpiles has been sampled, filtered and re-packaged for USEC's own use. The UF_6 contains trace quantities of other radionuclides introduced from DOE's practice during the years 1953 to 1975 of intermittently feeding reprocessed reactor fuel from government reactors in addition to unused UF_6. In particular, concentrations of ^{99}Tc in this material exceed the ASTM standard for nuclear fuel. PORTS is using chemical absorbents to remove the ^{99}Tc from liquid UF_6. PORTS has also detected occasional traces of various thorium isotopes in the process equipment.

In May 2001, USEC ceased enrichment operations at the Portsmouth GDP. Since then, the enrichment cascade has been in "Cold Standby". USEC is under contract to DOE to maintain the PORTS enrichment cascade in a condition that will allow it to be re-started within 24 months if needed. In addition, some of the equipment is being operated for in situ decontamination.

PORTS also uses a variety of sealed sources for calibration of equipment; however, none of these are released and therefore are not used in the determination of the effective dose equivalent (EDE). Column 1of Table 2.3 lists the radionuclides used in the determination of the EDE.

1.2.2 Monitored and Unmonitored Sources

The sources discussed in this section are the significant or potentially significant contributors to airborne radionuclide emissions from USEC operations.

PORTS reviewed the radiological emission sources on the plantsite and determined that fifteen had the greatest potential for emissions and equipped them with continuous emissions samplers (see Table 1.0). All fifteen are sampled continuously when operating by flow-proportional, isokinetic samplers to provide emissions data. Six of these sources (the purge cascades, the cold recovery systems, and the building wet air evacuation systems) are also monitored in real-time by ionization chamber instruments for operational control. Two of these sources (the X-343 and X-344 cold trap vents) are monitored in real-time by gamma detectors mounted on the continuous emission samplers for the same purpose. Laboratory analysis of the emissions samples is more sensitive, more accurate, and more reliable than either the ionization chambers or the gamma detectors but cannot provide real-time data required for process control.

Table 1.0 PORTS Monitored Emission Points

Location	Vent Identification Number
X-326 Top Purge Vent	X-326-P-2799
X-326 Side Purge Vent	X-326-P-2798
X-326 Emergency Jet Vent	X-326-P-616
X-326 Seal Exhaust Vent 6	X-326-A-540
X-326 Seal Exhaust Vent 5	X-326-A-528
X-326 Seal Exhaust Vent 4	X-326-A-512
X-330 Seal Exhaust Vent 3	X-330-A-279
X-330 Seal Exhaust Vent 2	X-330-A-262
X-333 Seal Exhaust Vent 1	X-333-A-851
X-330 Cold Recovery/Building Wet Air Evacuation Vent	X-330-A-272
X-333 Cold Recovery Vent	X-333-P-852
X-333 Building Wet Air Evacuation Vent	X-333-P-856
X-343 Cold Trap Vent	X-343-P-468
X-344 Gulper Vent	X-344-P-929
X-344 Cold Trap Vent	X-344-P-469

1.2.2.1 Monitored Sources

Top and Side Purge Cascades

The two purge cascades continuously separate light gases from process gas (UF_6) using gaseous diffusion. The separated process gas is returned to the main cascade from the tail of the purge cascades. The light gases are split at the head of the purge cascades with enough "lights" being recycled to the main cascade to maintain normal operating flows and the balance being vented through chemical adsorbent traps to the atmosphere. The Side Purge Cascade and Top Purge Cascade operate in series at the very head of the main cascade. For operational control, each of the two purge cascades is monitored separately with real-time instruments called "space recorders".

Operation of the purge cascades is required for continued operation of the main process cascade. Consequently, the two purge cascades are exhausted by three interconnected air jet eductors. The third eductor (Emergency Jet or E-Jet) is an operating spare for either or both regular eductors. The eductors are interconnected to a set of four exhaust pipes. The pipes extend up a 50-meter freestanding tower to remove the emissions from the X-326 Process Building's wind wake. For compliance purposes, each of the three eductors is fitted with separate continuous samplers.

The Top Purge Cascade continues to operate to support the in-situ decontamination activities mentioned above. The Side Purge Cascade is in standby with its associated eductor valved off. The Side Purge Cascade will eventually be restarted for decontamination of its own equipment. The E-Jet has continued to operate as needed, but has been needed only occasionally since May 2002. Both purge cascades and all three eductors remain available for use if needed.

Seal Exhaust Stations

The seal exhaust (SE) stations maintain a vacuum within cascade compressor shaft seals to prevent inleakage of wet air to the cascade. This vacuum is isolated from the compressor side of the seal by a buffer zone. Gases evacuated from the seals are pulled through chemical adsorbent traps by a bank of manifolded vacuum pumps and exhausted to the atmosphere through mist eliminators (for pump oil) and a roof vent. There is one seal exhaust station in each of the cascade's six "areas", each being located adjacent to an area control room (ACR).

As of the end of 2003, two of the seal exhaust stations (Areas 1 and 2) have been shut down. The rest of the seal exhaust stations continue to operate to support the in-situ decontamination activities. All of the seal exhaust stations are available for use if needed.

Cold Recovery Systems

The cold recovery systems are intermittently operated maintenance support systems used to prepare cascade equipment (cells) for internal maintenance. Process gas in cascade cells scheduled for maintenance is first evacuated to adjacent cascade cells to the extent practical. The cell is then sealed off and alternately purged with dry nitrogen and evacuated to the Cold Recovery System. The evacuated gases pass through chilled cylinders called "cold traps" to solidify any residual process gas.

The non-condensable nitrogen carrier is passed through chemical adsorbents for polishing and then is vented by an air jet eductor to the atmosphere. Periodically, individual cold traps are valved off from the vent, and the trapped UF_6 is returned to the cascade by vaporization. There are two cold recovery systems operated at PORTS with one each in the X-330 and X-333 Process Buildings. In X-330, the cold recovery system shares a common vent and vent sampler with the building wet air evacuation system.

Only the X-330 Cold Recovery System continues to operate to support the in-situ decontamination activities. Both of the Cold Recovery Systems are available for use if needed.

Building Wet Air Evacuation Systems

The building wet air evacuation systems are intermittently operated maintenance support systems used to prepare off-line cascade cells for return to service. The cell is sealed off and alternately purged with dry nitrogen and evacuated to remove all outside air and moisture from the cell. The evacuated gases are passed through chemical adsorbents to catch residual radionuclides (if any) and vented to the atmosphere by an air jet eductor. There are two building wet air evacuation systems, one associated with each of the cold recovery systems described above. In X-330, the cold recovery and building wet air evacuation systems share a common vent and sampler.

Only the X-330 Building Wet Air Evacuation System continues to operate to support the in-situ decontamination activities. This system shares a common vent with the X-330 Cold Recovery System. Both of the Building Wet Air Evacuation Systems are available for use if needed.

X-343 and X-344 Cold Trap Areas

Under PORTS' historic configuration, autoclaves in the X-343 facility vaporized UF_6 in 14-ton cylinders to provide feed material for the enrichment cascade. Autoclaves in the X-344 facility liquefied enriched UF_6 in 14-ton or 10-ton cylinders for quality control sampling and transfer to 2.5-ton cylinders for shipment to customers. Residual gases evacuated from the autoclave process piping were returned to the cascade.

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process included filtering the liquid UF_6 through chemical absorbents ("tech traps") to remove residual ^{99}Tc. In June 2002, all enriched material handling was consolidated at the Paducah GDP and the X-343 and X-344 facilities were dedicated to filtering ^{99}Tc from out-of-specification UF_6 feedstock before it is enriched at the Paducah GDP. This operation continued through 2003.

A second routine part of the sampling and packaging operation was the replacement and testing of damaged or otherwise out-of-specification valves on the UF_6 cylinders. As the tech removal project has progressed, the number of valves needing replacement has increased and the X-343 was dedicated to replacement and testing of cylinder valves in July 2003.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but were taken out of service since the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

X-344A Manifold Evacuation/Gulper

The X-344A Toll Transfer Facility contains an automated sampling and transfer system for sampling the product and for filling customer cylinders with low assay UF_6. The term "assay" refers to the concentration of ^{235}U in weight percent. To avoid cross contamination between samples and to prevent emissions to the air, the sampling and transfer manifold was formerly evacuated back to the diffusion cascade through a line to the X-342 Feed Vaporization and Fluorine Generation Building and, since May 2001, to the X-344 Cold Trap System. In the event of a trace release occurring in spite of the purge and evacuation procedure, a "gulper" is mounted behind the manifold-to-cylinder connections. The gulper is simply a continuous vacuum nozzle, similar in principal to a lab hood, which draws any small releases from the room air into a filtration system. The filtration system has two filter banks, each consisting of a roughing filter followed by high efficiency particulate air (HEPA) filters and a centrifugal blower.

1.2.2.2 Unmonitored and Potential Sources

PORTS has several unmonitored minor and potential emission sources associated with USEC process support activities. Based on process knowledge and historical ambient monitoring data, none of these sources are believed to contribute significantly (i.e. in excess of 1% of the USEPA standard) to plant radionuclide emissions under normal operations.

The minor sources, as the term is used at PORTS, have some trace radionuclides in their routine emissions but only in negligible amounts under normal operating conditions. The potential sources are primarily room ventilation exhausts and/or pressure relief vents from areas that have a potential for an internal radionuclide release.

Since 1995, PORTS has included emissions estimates from unmonitored sources in the calculation of the EDE. As required by NESHAP regulations, these estimates were updated for the 2000 and later calculations.

X-705 Decontamination Facility

Equipment that is removed from the PORTS cascade is sealed at the point of removal and transported to the X-705 Decontamination Facility. Small parts are cleaned in "hand tables" or spray tanks, while large parts are sent through an automated "tunnel." The hand tables consist of shallow acid baths (either nitric or citric depending on the metal to be cleaned) where metal parts are decontaminated by passive soaking. The hand tables have fume hoods over them to protect workers from acid fumes. The spray tanks are enclosed tanks where equipment can be cleaned remotely. Pressure relief vents are standard on such equipment. The tunnel is an enclosed series of "booths" that decontaminate large parts by spraying with decontamination solutions (acids and water rinses) as a small rail car carries the parts through the tunnel. The tunnel is ventilated to prevent a buildup of acid fumes. In all cases, radionuclides (uranium and technetium) are dissolved in the liquid phase and collected for recovery of the uranium. None of the radionuclides are volatilized through normal operation of these facilities and only trace radionuclides carried by entrained droplets would be expected.

The X-705 facility has seen minimal use since the end of enrichment operations, but is still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Calciners

Decontamination solutions are treated to yield a concentrated aqueous solution of uranyl nitrate, which is converted into uranium oxide powder in one of three calciners located in the X-705 Decontamination Facility. A calciner consists of an inclined heated tube with the uranyl nitrate solution entering at the top and air entering at the bottom. The uranium is first dried and then oxidized as it passes down the tube. The uranium oxide powder is collected directly into a five-inch diameter storage can at the lower end of the calciner tube. The gaseous stream leaves the upper end of the calciner and is exhausted through a scrubber for NO_x control. Uranium is recovered from the spent scrubber solution through a microfiltration process and the effluent is discharged to a National Pollutant Discharge Elimination System permitted outfall. Turbulence and flow rates through the calciners are controlled to minimize blowback of the uranium oxide. Any blowback that does occur is entrapped by the entering uranium solution.

The calciners have seen minimal use since the end of enrichment operations, but are still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Glove Boxes

The five-inch can that collects the uranium oxide powder from each calciner is housed in a glove box to prevent the loss of the material. In addition, there is a separate glove box which is used for sampling the material in the can. The glove boxes have air locks for the entry and removal of work materials and are maintained under negative pressure during use. This negative pressure is produced by an exhaust fan drawing through a HEPA filter.

Like the calciners, the gloveboxes have seen minimal use since the end of enrichment operations, but are still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Storage Tank Vents

Uranium-bearing solutions awaiting treatment are stored in a manifold of five-inch diameter tanks inside the X-705 facility. All of these tanks are manifolded to a common pressure relief vent that has some potential to release radionuclides if the tanks are overfilled or overheated. Normal emissions should be zero since the stored liquids are quiescent, the dissolved radionuclides are non-volatile, and the vents are not open except during filling.

Emissions estimates from sources in the X-705 Decontamination Facility are included in the EDE calculations. Emissions from X-705 were modeled as a single source. The emissions from X-705 were estimated using the factors given in the Code of Federal Regulations, Title 40, Part 61, Appendix D, and are extremely conservative.

Laboratory Fume Hoods

Laboratory analysis of process and other samples is performed in the PORTS on-site laboratory in accordance with standard laboratory practices. There are no emissions controls on the lab hoods used in these procedures. The hoods should not exhibit any measurable radionuclide emissions during normal operation. Small amounts of technetium are partially volatilized by the analytical method approved by the Environmental Protection Agency under the Safe Drinking Water Act. There is also a possibility of a UF_6 sample container bursting during processing. This is an extremely rare occurrence, however, and cannot be regarded as normal operation as specified in the NESHAP regulations. Most laboratory fume hoods are located in the X-710 Laboratory. There are two fume hoods in the X-760 Chemical Engineering Building which operates as an adjunct to the X-710 Laboratory. These hoods were formerly used to prepare environmental samples such as soil, water, air, and vegetation samples for analysis in the X-710 Laboratory. The level of radionuclides in these samples is extremely low as evidenced by the analytical results. The X-705 Decontamination Facility has a small laboratory which contains three fume hoods which are used to prepare samples and analyze materials being processed in the building.

Emissions from the X-710 Laboratory were estimated using the 40 CFR 61 Appendix D method. These estimates were included in the source term for the dose modeling using CAP88. The emissions from the X-710 were modeled as a single source.

The X-710 Laboratory has a Radioactive Material License from the State of Ohio and now expects to start accepting this work in 2004.

XT-847 Glove Box

The XT-847 Glove Box is a large stainless steel glove box which is used to batch small quantities of radioactively contaminated waste for more efficient and less costly storage, shipment, and disposal. The glove box is used primarily to batch spent alumina and other adsorbents used in control traps on process vents. When the adsorbent is removed from use, it is placed in a safe geometry container (5", 8" or 12" diameter, depending on assay). The material is then analyzed, and if the assay meets nuclear criticality safety limits, it is batched into larger containers including, but not limited to, 55 gallon drums. Other radiological materials may also be handled in the glove box.

Room Air Exhausts

Several uranium handling areas within the plant buildings have some potential for releasing minute ($\leq$1 gram) amounts of UF_6 into the room air. Releases of this size are characterized as small releases (visually resembling a puff of cigarette smoke). However, it should not be implied that any size release is acceptable or overlooked by PORTS. Studies conducted in the early 1980s demonstrated that a release of one gram of UF_6 produces a much larger release (smoke cloud) than what is normally observed during the operations discussed here. Ventilation exhausts from, and worker protection within these areas, are controlled according to the probability of releases occurring. Standard policy in the event of a release is to evacuate the area and remotely close down the local ventilation for confinement and subsequent decontamination.

Material feed and withdrawal areas occasionally have small releases when disconnecting UF_6 containers from process piping. These areas include the X-342A Feed and Fluorine Generation Facility, the X-343 Feed Facility, the X-344A Toll Transfer Facility, the X-330 Tails Withdrawal Area, the X-333 Low Assay Withdrawal Area, and the X-326 Extended Range Product and X-326 Product Withdrawal Areas. These areas have dedicated ventilation exhausts for worker protection but no emission controls or continuous vent monitors (except at the X-344A Toll Transfer Facility). The plant's Health Physics (HP) Department samples the air inside these areas for worker protection. The HP data indicates the average radionuclide concentrations inside the room are typically equivalent to natural background and, based on this, emissions from the room can be presumed to be environmentally insignificant.

The highest probability of internal releases besides the X-344A Sampling/Transfer Area, which was discussed in the previous section, is in the X-705 Decontamination Facility South Annex, where contaminated equipment is unsealed and disassembled. The South Annex has a separate HEPA filtered ventilation system and operates as a sealed area. Supplied air respirators are mandated for worker protection within the annex when the facility is in use. Normal emissions to the outside air should be negligible, which is consistent with past ambient monitoring performed by the plant's HP Department. The main operation in the South Annex during 2003 was the processing of spent technetium filters from the X-344. The filter media (a granular solid) is transferred from the filter itself to small NRC-approved containers by a HEPA filtered vacuum. This particular operation is new to PORTS and the additional emissions have been estimated based on the weight of filter media processed in 2003, laboratory analyses of filter media samples, and methods from 40 CFR 61 Appendix D.

The "cell floors" of the process buildings are subject to a lesser potential for unplanned releases when cascade components are being serviced or removed. Special worker protection ventilation systems for the cell floors are not considered necessary for several reasons, including the huge volume of air passing through the general ventilation systems (approximately 4,000 process motors are air-cooled by the general ventilation system) and the lower potential for a release. The cell floor air is sampled by the HP Department. The same results found in the material withdrawal areas are seen on the cell floor. Routine emissions levels from process building ventilation should be equal to natural background levels.

SECTION 2.0 AIR EMISSIONS DATA

Table 2.0 and Table 2.1 summarize the control device information for each source and give the distance and direction from each source to the nearest resident, school, office or business, and vegetable, meat, and milk-producing farms.

2.1 Radionuclide Emissions from Point Sources

The CAP88 model allows up to six sources to be modeled at one time, but assumes that all sources are located at the origin of the same circular grid. PORTS modeled its emissions as three co-located stacks sited at the actual location of the predominant source, the X-326 Tall Stack, up to 1995. From 1995 through 1997, USEC modeled its emissions from PORTS as nine individual release points at nine different locations to ensure that the impact of estimated emissions from grouped sources close to the downwind site boundary was not underestimated. This required nine different model runs that had to be combined manually, however.

In 1998, after consultation with USEPA-Region 5, the nine sources were re-grouped into three source groups. At that time, the source terms from the lesser sources in each group were typically an order of magnitude lower than the source term from the predominant source in that same group. In 2000, a tenth source (the XT-847 Glove Box Exhaust) was added to the list. In 2001, two more sources were added (the Cold Trap Vents in X-343 and X-344). Since then, the source groups have been re-organized, based on changing emission levels. See Table 2.2 for a description of the emission points for each modeled source.

Group 1 now includes the X-326 Stack, all other X-326 vents, all X-710 Laboratory vents and the XT-847 Glove Box Exhaust; these sources were modeled from the location of the X-326 Stack. Group 2 includes only the two X-344 vents; modeled from the location of X-344 Cold Trap Vent. Group 3 includes the X-330, X-333, X-343, X-700, X-705, and X-720 building vents; modeled from the middle of the X-705 Building.

The individual source terms and stack characteristics for each of the twelve sources are provided in Table 2.3 and Table 3.0 of this report.

2.2 Radionuclide Emissions from Fugitive and Diffuse Sources

There were no significant emissions of radionuclides from diffuse or fugitive sources at PORTS due to USEC operations.

PORTS maintains a network of ambient air monitors around the plantsite which continuously sample for particulate radionuclides. In June of 1995, DOE formally transferred ownership and operational control of the ambient air monitoring network to USEC. On October 1, 2000, USEC returned ownership and control of the ambient air monitoring network to DOE, which upgraded the samplers and uses them in their own public dose assessment program.

Table 2.0 Point Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-326 Top Purge, Side Purge & E-jet (Cascades) (3 monitors)[b]	Chemical Adsorbents	0-95%[c]	1370 SE	5000 NNW	1520 SSE	4290 N	1370 E	8660 ENE
X-330 Cold Recovery/Wet Air Evacuation Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1690 ESE	3930 NNW	1370 W	3200 N	1520 ESE, W	8380 ENE
X-333 Cold Recovery Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-333 Wet Air Evacuation Vent	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-326 Seal Exhaust Area 6	Chemical Adsorbents	0-95%[c]	1430 E	4880 NNW	1620 SSE	4180 N	1340 E	8630 ENE
X-326 Seal Exhaust Area 5	Chemical Adsorbents	0-95%[c]	1460 E	4630 NNW	1540 WNW	3940 N	1340 E	5830 ENE
X-326 Seal Exhaust Area 4	Chemical Adsorbents	0-95%[c]	1500 ESE	4420 NNW	1460 WNW	3720 N	1340 E	8470 ENE

See notes on page 13.

Table 2.0 Point Sources, continued

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-330 Seal Exhaust Area 3	Chemical Adsorbents	0-95%[c]	1620 E	4080 NNW	1400 W	3360 N	1430 E	8400 ENE
X-330 Seal Exhaust Area 2	Chemical Adsorbents	0-95%[c]	1725 ESE	3690 NNW	1430 WSW	3020 N	1580 SE, W	8320 ENE
X-333 Seal Exhaust Area 1	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-343 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1070 ESE	3980 NW	2130 WSW	2980 N	1040 SSE	7620 ENE
X-344A Manifold Evacuation/ Gulper	HEPA Filters	99.97%	1830 ESE	3410 NNW	1460 WSW	2680 N	1830 SSE	8320 ENE
X-344 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1870 ESE	3380 NNW	1440 WSW	2660 N	1860 SSE	8340 ENE
XT-847 Glove Box	HEPA Filters	99.97%	640 SSW	5840 N	980 SE	5150 N	1300 S	9150 ENE

See notes on page 13.

Table 2.1 Grouped Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-705 Calciners (3)	Wet Scrubber	75%[e]	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-710 Laboratory Fume Hoods (39)	None	N/A	1260 E	4690 NNW	1660 WNW	3930 N	1130 E	8350 ENE
X-705 Decontamination Facility	One area HEPA Others none	99.97% N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-705 Storage Tank Vents	None	N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-700 Cleaning Building	HEPA Filters	99.97%	1220 ESE	3910 NNW	1910 W	3200 N	930 E	7840 ENE
X-720 Maintenance Facility	None	N/A	1220 E	4250 NNW	1800 W	3430 N	1010 E	7880 ENE
Room Air Exhausts	None	N/A	850 ESE	3410 NNW	1370 W	2680 N	760 SE	7560 ENE

See notes on page 13.

	Notes to Tables in Section 2.0
a	All sources in Table 2.0 have continuous vent monitors except the XT-847 Glove Box.
b	The Top and Side Purge Cascade vent streams pass separately through activated alumina traps. A third line, the Emergency Jet, connects to both lines through block valves. All three lines have continuous samplers. The three vent lines connect to four exhaust pipes that extend above the 50-meter tower. The Top Purge jet is vented directly through one pipe. The Side Purge Jet and Emergency Jet lines are interconnected to the other three pipes.
c	Chemical adsorbents (such as activated alumina and sodium fluoride) are approximately 95 percent effective at concentrations above 1 ppm. Below this concentration, chemical adsorbents have reduced efficiency or no effect. Normal concentrations entering the Purge Cascade Chemical Traps are near or below 1 ppm. The sample traps (which follow the control traps) use activated alumina hydrated to 14 percent moisture content, which is much more effective due to an instantaneous reaction of gaseous UF_6 and Tc with the water to form particulate matter.
d	Based on process knowledge, cold traps are estimated to be approximately 90 to 95 percent effective in trapping gaseous UF_6.
e	Scrubber efficiency is estimated to be approximately 75 percent but has not been rigorously measured. Normal emissions from the source are estimated to be negligible compared to monitored sources (<0.001 curies of uranium).

Table 2.2 Grouping of USEC Vents for Modeling

Source	Consists of	Modeled with Source
1	X-326 Top Purge Vent, Side Purge Vent and Emergency Jet Vent	1
2	X-326 Extended Range Product emissions, SE 6 Vent, SE 5 Vent and SE 4 Vent	1
3	X-330 Building Cell Evacuation/Cold Recovery Vent, SE 3 Vent and SE 2 Vent	7
4	X-333 Low Assay Withdrawal, Cold Recovery Vent, Building Wet Air Evacuation Vent, and SE 1 Vent	7
5	X-344 Gulper Vent	5
6	All X-700 vents	7
7	All X-705 vents	7
8	All X-710 vents	1
9	All X-720 vents	7
10	XT-847 Glove Box	1
11	X-343 Cold Trap Vent	7
12	X-344 Cold Trap Vent	5

Table 2.3 Releases (in Curies) During CY 2003

NUCLIDE	USEC Sources												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
^{234}U	1.19E-05	3.10E-05	7.44E-05	1.87E-04	3.42E-06	0	8.65E-03	8.07E-03	1.07E-06	1.81E-05	9.06E-03	3.57E-04	2.64E-02
^{235}U	8.01E-06	4.23E-06	6.34E-06	1.25E-05	9.96E-07	0	2.90E-04	2.71E-04	3.59E-08	6.06E-07	4.31E-04	1.62E-05	1.04E-03
^{238}U	2.93E-06	6.12E-06	1.57E-05	6.58E-05	2.16E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	9.54E-04	3.56E-04	1.14E-02
^{99}Tc	8.84E-03	2.99E-03	2.37E-03	2.76E-03	5.50E-04	0	1.94E-03	1.81E-03	0	2.81E-04	1.31E-03	9.76E-04	2.38E-02
^{228}Th	0	0	0	0	4.77E-07	0	5.06E-12	0	0	0	3.74E-07	6.05E-08	9.12E-07
^{230}Th	0	0	0	0	2.42E-06	0	1.92E-11	0	0	0	1.37E-06	7.51E-07	4.55E-06
^{231}Th	8.01E-06	4.23E-06	6.34E-06	1.25E-05	9.96E-07	0	2.90E-04	2.71E-04	3.59E-08	6.06E-07	4.31E-04	1.62E-05	1.04E-03
^{232}Th	0	0	0	0	1.04E-07	0	3.02E-13	0	0	0	4.60E-08	9.62E-09	1.59E-07
^{234}Th	2.93E-06	6.12E-06	1.57E-05	6.58E-05	2.16E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	9.54E-03	3.56E-04	1.14E-02
^{234m}Pa	2.93E-06	6.12E-06	1.57E-05	6.58E-05	2.16E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	9.54E-03	3.56E-04	1.14E-02

Notes:

1. Sources 6 and 9 (X-700 & X-720) do not routinely process technetium. Equipment going to these buildings is first decontaminated in X-705 to strip all removable contamination. Therefore, emissions of Tc are estimated to be zero.

2. Source 6 is not known to have processed any removable uranium during 2003. Therefore, all uranium and uranium daughter emissions from this building are estimated to be zero.

SECTION 3.0 DOSE ASSESSMENT

3.1 Description of Dose Model

The radiation dose calculations were performed using the CAP88 package of computer codes. This package contains USEPA's most recent version of the AIRDOS-EPA computer code. This program implements a steady-state, Gaussian plume, atmospheric dispersion model to calculate environmental concentrations of released radionuclides. It also includes Regulatory Guide 1.109 food chain models to calculate human exposure, both internal and external, to radionuclides deposited in the environment. The human exposure values are then used by USEPA's latest version of the DARTAB computer code to calculate radiation dose to man from the radionuclides released during the year. The dose calculations use dose conversion factors in the latest version of the RADRISK data file, which is provided by USEPA with the CAP88 package.

3.2 Summary of Input Parameters

Except for the radionuclide parameters given in Section 2.0 and those provided below, all important input parameter values used are the default values provided with the CAP88 computer codes and data bases.

Solubility Class:	All uranium isotopes:	D
	Technetium-99	D
	All uranium daughters	W
	All other thorium isotopes	W
AMAD:		1 μm
Meteorological data:		2003 data from onsite tower
Rainfall rate:		119.0 cm/year (CY 2003)
Average air temperature:		12.53 °C (CY 2003)
Average mixing layer height:		1000 meters

Fraction of foodstuffs from:	Local Area	Within 50 mi	Beyond 50 mi*
Vegetables and produce	0.700	0.300	0.000
Meat	0.442	0.558	0.000
Milk	0.399	0.601	0.000

*The dose estimate for foodstuffs is very conservative when 0.0 is used as an input parameter in the category of foodstuffs consumed that were produced at a distance of 50 miles or more from the PORTS site. Realistically, it can be assumed that very little of the foodstuffs consumed by residents within a 50-mile radius of PORTS are produced within 50 miles of the PORTS site. The majority of the foodstuffs consumed are purchased at supermarkets that receive foodstuffs from all over the world.

3.3 Source Characteristics

Table 3.0 Source Characteristics

Source	Type	Release Height (m)	Inner Diameter (m)	Gas Exit Velocity (m/s)	Gas Exit Temperature (°C)	Distance to Nearest Individual (m)	Direction to Nearest Individual
1	Point	50	0.25	18.0	35.0	1370	SE
2	Point	20	0.97	24.0	35.0	1430	E
3	Point	20	0.20	61.0	35.0	1620	E
4	Point	20	0.62	29.0	35.0	1330	ESE
5	Point	20	0.36	0.3	23.8	1830	ESE
6	Point	16	0.30	14.0	23.8	1220	ESE
7	Point	14	1.50	12.3	26.7	1330	ESE
8	Point	9	1.00	10.2	26.7	1260	E
9	Point	18	1.19	9.0	23.8	1220	E
10	Point	11	0.406	5.5	35.0	640	SSW
11	Point	33	0.076	9.3	23.8	1070	ESE
12	Point	15	0.35	0.4	23.8	1870	ESE

3.4 Compliance Assessment

In 1996, USEPA allowed USEC and DOE to submit separate reports for their areas of responsibility. However, each entity was directed to include the other's dose assessment values in its report in order to show the plant's total effect on the public.

The most exposed member of the public received an EDE of 0.033 mrem/yr (3.3×10^{-4} mSv/yr) from **USEC operations** as calculated by the CAP88 mainframe model. **DOE operations** contributed an additional 0.0066 mrem/yr (6.6×10^{-5} mSv/yr) to this individual's EDE for a total of 0.039 mrem/yr (3.1×10^{-4} mSv/yr) from **total plant operations**. This individual was located 1580 meters east-northeast of USEC's predominant emission sources (Source Group 3) and 640 meters east of DOE's predominant emission source (the X-624 Groundwater Treatment Facility). This individual was also the most exposed individual due to **DOE operations** and **total plant operations**.

SECTION 4.0 ADDITIONAL INFORMATION

4.1 Collective EDE (Person-Rem/Yr)

The Table 4.0 gives the 50-mile radius EDEs over the past ten years. The EDEs for the most exposed individual are also given for comparison. The collective EDE for persons living in the village of Piketon (~2070 persons) is 0.018 person-rem/yr.

Table 4.0 Annual Doses Due to PORTS (USEC) Airborne Emissions, 1994-2003[1]

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	EPA Std
EDE[2] (mrem/yr)	0.06	0.13	0.14	0.12	1.69	0.28	0.039	0.052	0.026	0.033	10
Collective EDE[3,4]	0.6	1.2	2.2	1.5	6.4	1.0	0.15	0.18	0.095	0.18	N/A

Notes to Table 4.0:

1. EDE values through 1995 are for total plant operations; since 1996, figures are for USEC operations only.
2. The most exposed individual (USEC operations only) in 2003 was located 1580 meters ENE of the X-705 Decontamination Facility.
3. Collective EDE in person-rem/yr for 50-mile radius. This is a summation of the dose to each individual living within a 50-mile radius.
4. Population distributions for calendar year 2001 onward were updated from 2000 census data.

4.2 New/Modified Sources

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process included filtering the liquid UF_6 through chemical absorbents ("tech traps") to remove residual ^{99}Tc.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but have been out of service since the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

During 2002, the sampling and transfer of enriched UF_6 was consolidated at the Paducah GDP and the PORTS facilities dedicated to removing ^{99}Tc from contaminated UF_6 feedstock. Removal of ^{99}Tc contamination was a normal part of the sampling and transfer operation and no physical modifications were required. Technetium releases from the feedstock operation have been negligible (undetectable for the most part) and uranium activity releases have been reduced due to the lower assay being processed (less than one percent U-235 instead of up to five percent).

Since beginning the feedstock operation, however, it has become apparent that thorium and transuranics were also being collected and concentrated in the tech traps. Wipe samples of the process piping indicates that these nuclides are predominately confined to the immediate vicinity of the tech traps, but as a precaution ^{228}Th, ^{230}Th, ^{232}Th, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, and ^{241}Am were added to the weekly analyses for the X-343 and X-344 vent samplers beginning at the end of July 2002. As of the end of 2002, no transuranic isotopes had been detected in vent emissions and those analyses have been returned to their previous frequency. Individual thorium isotopes were detected seven times (out of 150 possible detections) between July and the end of 2002 though.

The annual thorium release is several orders of magnitude less than the uranium release, but these thorium isotopes have a much higher dose response than soluble uranium. Therefore, USEC conducted an analysis of the relative releases and their dose response (based on the stochastic Annual Limiting Intake published in Appendix B to 10 CFR 20). The result indicated that the thorium isotopes would contribute less than four percent of the total public dose even if assumed emissions at the detection limit were included. This is well under the ten percent standard for inclusion under 40 CFR 61.93(b)(4)(i). The issue was discussed with Mr. Mike Murphy of USEPA and it was decided to include quantifiable thorium emissions in the site's annual dose assessment, but to exclude assumed emissions where no thorium was detected.

To reduce the volume of low level radioactive waste generated by the feedstock project, PORTS began consolidating spent technetium absorbent rather than disposing of the filters as sealed units. The spent absorbent is transferred from the filter body into a small container using a HEPA filtered vacuum. This takes place in the X-705 South Annex, which is itself HEPA filtered. The closed containers are later consolidated in 55-gallon drums for disposal. Airborne emissions from this operation during 2003 were estimated using Appendix D methods and added to the existing emission estimates for X-705. Aside from trace amounts of long-lived thorium isotopes, the additional emissions were not sufficient to change the previous emission estimates.

At the beginning of the feedstock project, X-343 primarily performed UF_6 sampling and replaced damaged UF_6 cylinder valves as needed. As the project proceeded, the number of cylinder valves that required replacement increased to the point that X-343 was dedicated to this function starting in July 2003. This operation includes a post-maintenance test that includes pressurizing the cylinder with dry air to test for leakage, then evacuating the cylinder to a specified vacuum. It was expected that radionuclide emissions from X-343 would decrease since the UF_6 is not heated at any point during this operation. In actuality, the increased gas volume of dilute UF_6 from the testing resulted in a net increase in emissions through July 2003. X-343 operations were halted and administrative controls put in place prior to resuming operations in August. Engineered controls that increased the efficiency of the cold traps replaced the administrative controls in September. Current emissions from the X-

343 Cold Trap Vent are somewhat higher than they were during the sampling operation, but are still an order of magnitude lower than traditional emissions from the Purge Cascades.

4.3 Unplanned Releases

No major unplanned releases occurred during calendar year 2003.

Minor releases occurred during attaching and detaching of lines to cylinders or when other anomalous conditions developed. The practice of as low as reasonably achievable (ALARA) is used to shut down the building ventilation system to prevent the release from reaching the atmosphere. Therefore, PORTS feels that the small releases should be considered insignificant.

SECTION 5.0 SUPPLEMENTAL INFORMATION

5.1 Radon Emissions

PORTS does not have and does not expect to have any ^{220}Rn emissions due to ^{232}U or ^{232}Th sources. PORTS does not manage any ^{232}U and consequently does not have any emissions of ^{220}Rn due to ^{232}U decay. Although PORTS does not specifically manage ^{232}Th, some amount is present due to ^{236}U decay and feedstock contamination. ^{236}U is itself a trace component of the uranium managed at PORTS, and its thorium daughter is extremely long-lived (half-life greater than 14 billion years). These figures indicate that no measurable concentrations of ^{220}Rn due to ^{232}Th decay will exist onsite within any foreseeable future.

The uranium processed at PORTS has previously been chemically purified at the mill to remove all naturally occurring elements including ^{226}Ra, which is the precursor of ^{222}Rn. It has been calculated that 10,000 years would be required before detectable levels of ^{222}Rn would occur due to the natural decay process.

5.2 Compliance with NESHAP Subpart H Requirements

During 2003, USEC had continuous emissions monitors (samplers) on fifteen point sources of the 37 point/grouped sources that represent what are historically the major emission sources at PORTS. Most of the continuously monitored point sources are not actually subject to the continuous monitoring requirement. USEC believes that all fifteen monitors comply with the requirements of 40 CFR 61.93(b) (i.e., they are equivalent to the EPA reference methods). USEPA-Region 5 conducted a detailed inspection of the vent sampling program during its NESHAP inspections during the weeks of March 15, 1993, and July 22, 1996. Although not explicitly stated in the final inspection reports, USEPA-Region 5 has accepted the stack sampling methodology. Further USEPA inspections of this program were conducted in 1994, 1995, 1998, and 2000.

The final 1993 NESHAP inspection report did not address the frequency or the methodology for periodic confirmatory measurements. USEPA has accepted engineering estimates, and USEC has made emissions estimates for all unmonitored radionuclide sources using the methods found in 40 CFR 61, Appendices D and E. Stack tests for radionuclides were made on six sources in 1989, and repeat testing was conducted on one source in 1993 as part of the process for renewal of the source's state air permit. The emissions estimates for all of the unmonitored sources were updated in 2000.

A NESHAP Compliance Plan was submitted by DOE in 1990 to document how PORTS planned to demonstrate compliance with the newly promulgated radionuclide NESHAP regulations in 40 CFR 61, Subpart H. The plan was revised and resubmitted in 1991 and 1992. USEC included continuous ambient air monitoring in its compliance plan to provide supporting evidence that no significant radionuclide emissions had been overlooked in the source monitoring program. However, USEPA-Region 5 never approved the use of ambient air monitoring to demonstrate USEC's compliance with the radiological NESHAP regulations on a continuing basis. The actions described in the plan were completed. On March 16, 1999, USEPA-Region 5 verbally agreed during a telephone conversation (POEF-520-99-038) that the compliance plan could now be considered a historical document.

PORTS has conducted an extensive stack and vent survey. Stacks with a potential to emit radionuclides have been identified and evaluated. See Attachment 1 for a listing of the radionuclide stacks/vents at PORTS.

5.3 Future Facilities

In February 2003, USEC, Inc. submitted a license application to the NRC to build and operate an American™ Centrifuge Lead Cascade at PORTS. NRC issued the license in March 2004. The Lead Cascade is to be installed in the existing X-3001 Process Building and will use the existing building vent. USEC currently plans to have the Lead Cascade in operation early in 2005.

The Lead Cascade will be a demonstration facility consisting of up to 240 individual centrifuges. The purpose of the Lead Cascade is to generate operability and economic data for a follow-on commercial centrifuge facility. The Lead Cascade will operate on full recycle with no UF_6 being withdrawn except samples for laboratory analysis. The total uranium inventory of the Lead Cascade will be only 250 kg UF6 (less than 0.125 Curies) and the maximum emission rate is predicted to be less than 0.001 Curie per week. Assuming that this emission rate was maintained for an entire year (which would shut down the cascade) the maximum predicted dose to a member of the public would still be only 0.023 mrem/yr. The Lead Cascade will have only one process vent, which will be equipped with a continuous vent monitor similar to the ones currently used on the X-343 and X-344 vents.

USEC, Inc. is now preparing an application for an NRC license for this follow-on commercial plant, to be sited adjacent to the Portsmouth Gaseous Diffusion Plant. USEC, Inc. currently plans to submit the application to the NRC in August 2004 and receive the license in 2006.

Attachment 1
PORTS 2003 Potential and Actual Radiological Emissions Point Sources
(To USEC Air Emissions Annual Report [Under Subpart H, 40 CFR 61.94] Calendar Year 2003).

STACK NUMBER	DESCRIPTION
X-326-A-512	Seal Exhaust Vent Area 4
X-326-A-540	Seal Exhaust Vent Area 6
X-326-A-528	Seal Exhaust Vent Area 5
X-326-B-284	ERP Withdrawal Room Vent
X-326-P-2798	S-Jet Exhaust - Purge Cascade
X-326-P-2799	T-Jet Exhaust - Purge Cascade
X-326-P-616	E-Jet Exhaust - Purge Cascade
X-330-A-079	Tails Withdrawal Room Exhaust
X-330-A-262	Seal Exhaust Vent Area 2
X-330-A-272	X-330 Cold Recovery/Building Wet Air Evacuation Vent
X-330-A-279	Seal Exhaust Vent Area 3
X-330-P-3020	X-330 Building Wet Air Evacuation System (Inactive)
X-333-A-832	Low Assay Withdrawal (LAW) Seal Exhaust Vent
X-333-A-851	Seal Exhaust Vent Area 1
X-333-A-852	X-333 Cold Recovery Vent
X-333-P-856	X-333 Building Wet Air Evacuation Vent
X-333-B-862	LAW Station Room Exhaust
X-342A-A-974	Autoclave Exhaust
X-343-B-1015	Exhaust Fan AJ 108
X-343-P-1011	Autoclave Air Ejector
X-343-P-468	Cold Trap Vent
X-343-P-964	Air Jet
X-343-P-997	Autoclave Housing Relief Vent
X-343-P-998	Autoclave Housing Relief Vent
X-343-P-999	Autoclave Housing Relief Vent
X-344-B-956	Room Air Over Maintenance Shops

STACK NUMBER	DESCRIPTION
X-344-P-929	Gulper Exhaust
X-344-P-469	Cold Trap Vent
X-344A-A-937	Air Ejector
X-700-A-1032	Large Parts Shot Blaster
X-700-A-1037	X-700 Rad Calibration Lab Fume Hood
X-700-A-1043	Converter Repair Station
X-700-A-1053	Small Parts Glass Blaster
X-705-A-1348	Fume Hood
X-705-A-1426	X-705 Gulper System
X-705-A-2813	Small Cylinder Cleaning Unit
X-705-B-1369	Recovery Room Vent
X-705-B-1372	Uranium Solution Storage Vent
X-705-B-1379	Dissolver Storage Columns
X-705-B-1384	Compressor Dismantling Area
X-705-B-2810	Small Cylinder Pit Hood Exhaust
X-705-B-2811	Blue Room
X-705-B-2826	Complexing Hand Table Hood
X-705-B-3091	South Annex Exhaust
X-705-P-1353	X-705 "B" Loop Storage Slabs
X-705-P-1354	X-705 "A" Loop Storage Slabs
X-705-P-1361	T-Water Storage Columns
X-705-P-1364	Bi Uranyl Nitrate Storage Column
X-705-P-1366	Heavy Metals Storage Columns
X-705-P-1375	Caustic Precipitation Handtable Exhaust
X-705-P-1377	Air Jet Recovery
X-705-P-1382	Alumina Filter Tables
X-705-P-1404	Tunnel Vent Fan
X-705-P-1406	Nitric Acid Booth

STACK NUMBER	DESCRIPTION
X-705-P-1422	X-705 Calciner Glove Box
X-705-P-1424	Uranium Sampling & Blending Glove Box
X-705-P-1950	X-705 North Spray Tank
X-705-P-1951	High Assay Parts Cleaning Tables
X-705-P-1952	Group I Hand Table
X-705-P-1953	Small Parts Pit Cleaning Area
X-705-P-1954	Handtable
X-705-P-1960	Ion Exchange Vent
X-710-B-1655	EF 101 Room 111 Lab Hood
X-710-B-1656	EF 122 Room 120 Lab Hood
X-710-B-1657	EF 102 Room 111 Lab Hood
X-710-B-1658	EF 103 Room 111 Lab Hood
X-710-B-1659	EF 123 Room 120 Lab Hood
X-710-B-1661	EF 104 Room 111 Lab Hood
X-710-B-1666	EF 124 Room 120 Lab Hood
X-710-B-1667	EF 106 Room 111 Lab Hood
X-710-B-1668	EF 107 Room 111 Lab Hood
X-710-B-1669	EF 125 Room 120 Lab Hood
X-710-B-1671	EF 108 Room 111 Lab Hood
X-710-B-1673	EF 112 Room 111 Lab Hood
X-710-B-1674	EF 109 Room 111 Lab Hood
X-710-B-1675	EF 126 Room 120 Lab Hood
X-710-B-1676	EF 110 Room 111 Lab Hood
X-710-B-1677	EF 111 Room 111 Lab Vent
X-710-B-1679	EF 127 Room 120 Lab Hood
X-710-B-1681	EF 113 Room 111 Lab Hood
X-710-B-1682	EF 128 Room 120 Lab Hood
X-710-B-1685	EF 114 Room 111 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1686	EF 115 Room 111 Lab Hood
X-710-B-1687	EF 129 Room 120 Lab Hood
X-710-B-1688	EF 116 Room 111 Lab Hood
X-710-B-1692	EF 6 Room 112 Room Vent
X-710-B-1693	EF 117B Room 111 Lab Hood
X-710-B-1694	EF 130 Room 120 Lab Hood
X-710-B-1696	EF 234 Room 240 Lab Hood
X-710-B-1697	EF 117A Room 111 Lab Hood
X-710-B-1698	EF 118 Room 111 Lab Hood
X-710-B-1701	EF 274 Room 240 Lab Hood
X-710-B-1703	EF 167 Room 114 Lab Hood
X-710-B-1706	EF 235 Room 240 Lab Hood
X-710-B-1707	EF 166 Room 114 Lab Hood
X-710-B-1710	EF 275 Room 241 Lab Hood
X-710-B-1711	EF 119 Room 114 Lab Hood
X-710-B-1719	EF 120 Room 115 Lab Hood
X-710-B-1724	EF 238 Room 243 Lab Hood
X-710-B-1732	EF 128 Room 115 Lab Hood
X-710-B-1733	EF 133 Room 128 Lab Hood
X-710-B-1744	EF 223 Room 229 Lab Hood
X-710-B-1747	EF 225 Room 229 Lab Hood
X-710-B-1749	EF 228 Room 229 Lab Hood
X-710-B-1750	EF 229 Room 229 Lab Hood
X-710-B-1751	EF 227 Room 229 Lab Hood
X-710-B-1753	EF 230 Room 229 Lab Hood
X-710-B-1757	EF 239 Room 243 Lab Hood
X-710-B-1758	EF 240 Room 243 Lab Hood
X-710-B-1759	EF 241 Room 243 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1761	EF 270 Room 238 Lab Hood
X-710-B-1779	EF 265 Room 285 Lab Hood
X-710-B-1789	EF 256 Room 263 Lab Hood
X-710-B-1803	EF 162 Room 157 Lab Hood
X-710-B-1805	EF 161 Room 142 Lab Hood
X-710-B-1808	EF 159 Room 156 Lab Hood
X-710-B-1810	EF 158 Room 156 Lab Hood
X-710-B-1811	EF 157 Room 156 Lab Hood
X-710-B-1814	EF 156 Room 156 Lab Hood
X-710-B-1821	EF 143 Room 138 Lab Hood
X-710-B-1822	EF 142 Room 138 Lab Hood
X-710-B-1823	EF 199 Room 138 Lab Hood (AA Unit, has HEPA filter)
X-710-B-1825	EF 141 Room 138 Lab Hood
X-710-B-1830	EF 140 Room 135 Lab Hood
X-710-B-1832	EF 139 Room 135 Lab Hood
X-710-B-1836	EF 138 Room 135 Lab Hood
X-710-B-1838	EF 137 Room 135 Lab Hood
X-710-B-1841	EF 136 Room 135 Lab Hood
X-710-B-1847	EF 134 Room 135 Lab Hood
X-710-B-1849	EF 135 Room 135 Lab Hood
X-720-A-1874	Grit Blasting Room
X-720-A-1545	Motor Shop Steam Cleaning Booth
X-720-A-1904	X-720 Burn Off Oven
X-720-B-1515	Sample Bottle Exhaust
XT-847-B-3102	XT-847 Glove Box

Attachment 2

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and a complete representation of the emissions under United States Enrichment Corporation's control. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment (see 18 U.S.C. 1001).

Name: Patrick D. Musser
General Manager

Signature: ______________________ **Date:** 6/21/04

United States Enrichment Corporation (USEC)
Air Emissions Annual Report
(Under Subpart H, 40 CFR 61.94)
Calendar Year 2004

Site Name: Portsmouth Gaseous Diffusion Plant

Operator: United States Enrichment Corporation

Address: Post Office Box 628, Mail Stop 9030
3930 U.S. Route 23 South
Piketon, Ohio 45661

Contact: T. Michael Taimi

Phone: (301) 564-3409

Owner: U.S. Department of Energy

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SECTION 1.0 FACILITY INFORMATION

1.1 Site Description

The Portsmouth Gaseous Diffusion Plant (PORTS) is owned by the Department of Energy (DOE). PORTS was operated by DOE until July 1, 1993. In 1992, Congress passed legislation amending the Atomic Energy Act of 1954 (the Act) to create the United States Enrichment Corporation, a government corporation, to operate the uranium enrichment enterprise in the United States. The government corporation began operation on July 1, 1993. In accordance with the Act, the United States Enrichment Corporation leased the production facilities at PORTS and its sister plant at Paducah, Kentucky from DOE. DOE retained operational control of most waste storage and handling facilities as well as all sites undergoing environmental restoration. In keeping with the Act, on July 28, 1998, the U.S. Department of the Treasury sold the uranium enrichment enterprise through an Initial Public Offering (IPO). USEC, Inc. officially became a private corporation on that date. The Portsmouth and Paducah gaseous diffusion plants are operated by a subsidiary of USEC, Inc., the United States Enrichment Corporation (USEC). In May 2001, USEC ceased uranium enrichment operations at PORTS. USEC continues to operate transfer facilities and certain support facilities at PORTS for the purpose of removing technetium (Tc) from off-specification uranium hexafluoride (UF_6) feed material. USEC also continues to maintain the enrichment cascade in a standby condition under contract to DOE.

The PORTS site is located in sparsely populated, rural Pike County, Ohio, on a 16.2-km^2 (6.3-$mile^2$) site about 1.6 km (1 mile) east of the Scioto River Valley at an elevation of approximately 36.6 m (120 ft) above the Scioto River floodplain. The terrain surrounding the plant, except for the Scioto River floodplain, consists of marginal farmland and densely forested hills. The Scioto River floodplain is farmed extensively, particularly with grain crops such as corn and soybeans.

Pike County has a generally moderate climate. Winters in Pike County are moderately cold, and summers are moderately warm and humid. The precipitation is usually well distributed with fall being the driest season. Prevailing winds at the site are out of the southwest to south. Average wind speeds are about 5 mph (8 km/h) although winds of up to 75 mph (121 km/h) have been recorded at the plantsite. Usually, high winds are associated with thunderstorms that occur in spring and summer. Southern Ohio lies within the Midwestern tornado belt, although no tornados have struck the plantsite to date.

Pike County has approximately 27,695 residents (2000 census data). Scattered rural development is typical; however, the county contains numerous small villages such as Piketon, Wakefield, and Jasper, which lie within a few kilometers of the plant. The county's largest community, Waverly, is about 19 km (12 miles) north of the plantsite and has a population of approximately 4,433 residents. Additional population centers within 80 km (50 miles) of the plant are Portsmouth (population 20,909), Chillicothe (population 21,796), and Jackson (population 6,184). The total population of the area lying within an 80-km (50-mile) radius of the plant is approximately 669,000.

USEC is responsible for the principal site process and support operations. Until May 2001, the principal site process was the separation of uranium isotopes through gaseous diffusion. From then until June 2002, the principal site process was quality control sampling, packaging and shipping of uranium enriched elsewhere. A normal part of the packaging process was the removal of residual technetium-99 (^{99}Tc) with chemical absorbents. In June 2002, the transfer and sampling operations were consolidated at the Paducah Gaseous Diffusion Plant and the PORTS facilities were dedicated to removing ^{99}Tc from UF_6 feedstock prior to enrichment. In addition, USEC is continuing to decontaminate some of the enrichment equipment in situ and is maintaining the gaseous diffusion process equipment in "cold standby" under contract to the DOE.

Support operations include the withdrawal of material from the decontaminated process equipment, treatment of water for both potable and cooling purposes, steam generation for heating purposes, decontamination of equipment either in situ or removed from the process, recovery of uranium from various waste materials, and treatment of industrial wastes generated onsite. DOE is responsible for operations such as the X-326 "L-Cage" and its glove box, the X-345 High Assay Sampling Area (HASA), and site remediation activities. Because of the separation of responsibilities, DOE and USEC are submitting separate annual NESHAP reports and are certifying only those activities for which they have direct responsibility. The following section is a description of USEC's emissions sources.

1.2 Source Description

1.2.1 Radionuclides Used at the Facility

As discussed above, the principal site process was the separation of uranium isotopes as UF_6 until May 2001 and now is the sampling and handling of UF_6. Large quantities of UF_6 are located on the site. From May 2001 until June 2002, UF_6 enriched in the ^{235}U isotope was received from the Paducah Gaseous Diffusion Plant located in Paducah, Kentucky for quality control sampling, transfer into customer-owned containers and shipment to customers. Since June 2002, unenriched UF_6 from both the Paducah and PORTS stockpiles has been sampled, filtered and re-packaged for USEC's own use. The UF_6 contains trace quantities of other radionuclides introduced from DOE's practice during the years 1953 to 1975 of intermittently feeding reprocessed reactor fuel from government reactors in addition to unused UF_6. In particular, concentrations of ^{99}Tc in this material exceed the ASTM standard for nuclear fuel. PORTS is using chemical absorbents to remove the ^{99}Tc from liquid UF_6. PORTS has also detected occasional traces of various thorium isotopes in the process equipment.

In May 2001, USEC ceased enrichment operations at the Portsmouth GDP. Since then, the enrichment cascade has been in "Cold Standby". USEC is under contract to DOE to maintain the PORTS enrichment cascade in a condition that will allow it to be re-started within 24 months if needed. In addition, some of the equipment is being operated for in situ decontamination.

PORTS also uses a variety of sealed sources for calibration of equipment; however, none of these are released and therefore are not used in the determination of the effective dose equivalent (EDE). Column 1of Table 2.3 lists the radionuclides used in the determination of the EDE.

1.2.2 Monitored and Unmonitored Sources

The sources discussed in this section are the significant or potentially significant contributors to airborne radionuclide emissions from USEC operations.

PORTS has reviewed the radiological emission sources on the plantsite and determined that fifteen had the greatest potential for emissions and equipped them with continuous emissions samplers (see Table 1.0). All fifteen are sampled continuously when operating by flow-proportional, isokinetic samplers to provide emissions data. Six of these sources (the purge cascades, the cold recovery systems, and the building wet air evacuation systems) are also monitored in real-time by ionization chamber instruments for operational control. Two of these sources (the X-343 and X-344 cold trap vents) are monitored in real-time by gamma detectors mounted on the continuous emission samplers for the same purpose. Laboratory analysis of the emissions samples is more sensitive, more accurate, and more reliable than either the ionization chambers or the gamma detectors but cannot provide real-time data required for process control.

Table 1.0 PORTS Monitored Emission Points

Location	Vent Identification Number
X-326 Top Purge Vent	X-326-P-2799
X-326 Side Purge Vent	X-326-P-2798
X-326 Emergency Jet Vent	X-326-P-616
X-326 Seal Exhaust Vent 6	X-326-A-540
X-326 Seal Exhaust Vent 5	X-326-A-528
X-326 Seal Exhaust Vent 4	X-326-A-512
X-330 Seal Exhaust Vent 3	X-330-A-279
X-330 Seal Exhaust Vent 2	X-330-A-262
X-333 Seal Exhaust Vent 1	X-333-A-851
X-330 Cold Recovery/Building Wet Air Evacuation Vent	X-330-A-272
X-333 Cold Recovery Vent	X-333-P-852
X-333 Building Wet Air Evacuation Vent	X-333-P-856
X-343 Cold Trap Vent	X-343-P-468
X-344 Gulper Vent	X-344-P-929
X-344 Cold Trap Vent	X-344-P-469

1.2.2.1 Monitored Sources

Top and Side Purge Cascades

The two purge cascades continuously separate light gases from process gas (UF_6) using gaseous diffusion. The separated process gas is returned to the main cascade from the tail of the purge cascades. The light gases are split at the head of the purge cascades with enough "lights" being recycled to the main cascade to maintain normal operating flows and the balance being vented through chemical adsorbent traps to the atmosphere. The Side Purge Cascade and Top Purge Cascade operate in series at the very head of the main cascade. For operational control, each of the two purge cascades is monitored separately with real-time instruments called “space recorders”.

Operation of the purge cascades is required for continued operation of the main process cascade. Consequently, the two purge cascades are exhausted by three interconnected air jet eductors. The third eductor (the E-Jet) is an operating spare for either or both regular eductors. The eductors are interconnected to a set of four exhaust pipes. The pipes extend up a 50-meter freestanding tower to remove the emissions from the X-326 Process Building's wind wake. For compliance purposes, each of the three eductors is fitted with separate continuous samplers.

The Top Purge Cascade continues to operate to support the in-situ decontamination activities mentioned above. The Side Purge Cascade is in standby with its associated eductor valved off. The E-Jet has continued to operate as needed, but has been needed only occasionally since May 2002. Both purge cascades and all three eductors remain available for use if needed.

Seal Exhaust Stations

The seal exhaust (SE) stations maintain a vacuum within cascade compressor shaft seals to prevent inleakage of wet air to the cascade. This vacuum is isolated from the compressor side of the seal by a buffer zone. Gases evacuated from the seals are pulled through chemical adsorbent traps by a bank of manifolded vacuum pumps and exhausted to the atmosphere through mist eliminators (for pump oil) and a roof vent. There is one seal exhaust station in each of the cascade's six "areas", each being located adjacent to an area control room (ACR).

Two of the seal exhaust stations (Areas 1 and 2) have been shut down. The rest of the seal exhaust stations continue to operate to support the in-situ decontamination activities. All of the seal exhaust stations are available for use if needed.

Cold Recovery Systems

The cold recovery systems are intermittently operated maintenance support systems used to prepare cascade equipment (cells) for internal maintenance. Process gas in cascade cells scheduled for maintenance is first evacuated to adjacent cascade cells to the extent practical. The cell is then sealed off and alternately purged with dry nitrogen and evacuated to the Cold Recovery System. The evacuated gases pass through chilled cylinders called "cold traps" to solidify any residual process gas. The non-condensable nitrogen carrier is passed through chemical adsorbents for polishing and then is vented by an air jet eductor to the atmosphere. Periodically, individual cold traps are valved off from the vent, and the trapped UF_6 is returned to the cascade by vaporization. There are two cold recovery systems operated at PORTS with one each in the X-330 and X-333 Process Buildings. In X-330, the cold recovery system shares a common vent and vent sampler with the building wet air evacuation system.

Only the X-330 Cold Recovery System continues to operate to support the in-situ decontamination activities. Both of the Cold Recovery Systems are available for use if needed.

Building Wet Air Evacuation Systems

The building wet air evacuation systems are intermittently operated maintenance support systems used to prepare off-line cascade cells for return to service. The cell is sealed off and alternately purged with dry nitrogen and evacuated to remove all outside air and moisture from the cell. The evacuated gases are passed through chemical adsorbents to catch residual radionuclides (if any) and vented to the atmosphere by an air jet eductor. There are two building wet air evacuation systems, one associated with each of the cold recovery systems described above. In X-330, the cold recovery and building wet air evacuation systems share a common vent and sampler.

Only the X-330 Building Wet Air Evacuation System continues to operate to support the in-situ decontamination activities. This system shares a common vent with the X-330 Cold Recovery System. Both of the Building Wet Air Evacuation Systems are available for use if needed.

X-343 and X-344 Cold Trap Areas

Under PORTS' historic configuration, autoclaves in the X-343 facility vaporized UF_6 in 14-ton cylinders to provide feed material for the enrichment cascade. Autoclaves in the X-344 facility liquefied enriched UF_6 in 14-ton or 10-ton cylinders for quality control sampling and transfer to 2.5-ton cylinders for shipment to customers. Residual gases evacuated from the autoclave process piping were returned to the cascade.

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process also included filtering the liquid UF_6 through chemical absorbents to remove residual ^{99}Tc. In June 2002, all enriched material handling was consolidated at the Paducah GDP and the X-343 and X-344 facilities were dedicated to filtering ^{99}Tc from out-of-specification UF_6 feedstock before it is enriched at the Paducah GDP. This operation continued through 2004.

A second routine part of the sampling and packaging operation was the replacement and testing of damaged or otherwise out-of-specification valves on the UF_6 cylinders. As the ^{99}Tc removal project has progressed, the number of valves needing replacement has increased and the X-343 was refocused on the replacement and testing of cylinder valves in July 2003.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but were taken out of service after the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

In mid-2004, the X-343 and X-344 were re-connected to the cascade to assist in the evacuation of residual material ("heels") from used UF_6 cylinders. Residual gasses from these buildings can now be sent to either the cold traps or back to the cascade.

X-344A Manifold Evacuation/Gulper

The X-344A Toll Transfer Facility contains an automated sampling and transfer system for sampling the product and for filling customer cylinders with low assay UF_6. The term "assay" refers to the concentration of ^{235}U in weight percent. To avoid cross contamination between samples and to prevent emissions to the air, the sampling and transfer manifold was formerly evacuated back to the diffusion cascade through a line to the X-342 Feed Vaporization and Fluorine Generation Building and, since May 2001, to the X-344 Cold Trap System. In the event of a trace release occurring in spite of the purge and evacuation procedure, a "gulper" is mounted behind the manifold-to-cylinder connections. The gulper is simply a continuous vacuum nozzle, similar in principal to a lab hood, which draws any small releases from the room air into a filtration system. The filtration system has two filter banks, each consisting of a roughing filter followed by high efficiency particulate air (HEPA) filters and a centrifugal blower.

1.2.2.2 Unmonitored and Potential Sources

PORTS has several unmonitored minor and potential emission sources associated with USEC process support activities. Based on process knowledge and historical ambient monitoring data, none of these sources are believed to contribute significantly (i.e. in excess of 1% of the USEPA standard) to plant radionuclide emissions under normal operations.

The minor sources, as the term is used at PORTS, have some trace radionuclides in their routine emissions but only in negligible amounts under normal operating conditions. The potential sources are primarily room ventilation exhausts and/or pressure relief vents from areas that have a potential for an internal radionuclide release.

Since 1995, PORTS has included emissions estimates from unmonitored sources in the calculation of the EDE. As required by NESHAP regulations, these estimates were updated for the 2000 and later calculations.

X-705 Decontamination Facility

Equipment that is removed from the PORTS cascade is sealed at the point of removal and transported to the X-705 Decontamination Facility. Small parts are cleaned in "hand tables" or spray tanks, while large parts are sent through an automated "tunnel." The hand tables consist of shallow acid baths (either nitric or citric depending on the metal to be cleaned) where metal parts are decontaminated by passive soaking. The hand tables have fume hoods over them to protect workers from acid fumes. The spray tanks are enclosed tanks where equipment can be cleaned remotely. Pressure relief vents are standard on such equipment. The tunnel is an enclosed series of "booths" that decontaminate large parts by spraying with decontamination solutions (acids and water rinses) as a small rail car carries the parts through the tunnel. The tunnel is ventilated to prevent a buildup of acid fumes. In all cases, radionuclides (uranium and technetium) are dissolved in the liquid phase and collected for recovery of the uranium. None of the radionuclides are volatilized through normal operation of these facilities and only trace radionuclides carried by entrained droplets would be expected.

The X-705 facility has seen minimal use since the end of enrichment operations, but is still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Calciners

Decontamination solutions are treated to yield a concentrated aqueous solution of uranyl nitrate, which is converted into uranium oxide powder in one of three calciners located in the X-705 Decontamination Facility. A calciner consists of an inclined heated tube with the uranyl nitrate solution entering at the top and air entering at the bottom. The uranium is first dried and then oxidized as it passes down the tube. The uranium oxide powder is collected directly into a five-inch diameter storage can at the lower end of the calciner tube. The gaseous stream leaves the upper end of the calciner and is exhausted through a scrubber for NO_x control. Uranium is recovered from the spent scrubber solution through a microfiltration process and the effluent is discharged to a National Pollutant Discharge Elimination System permitted outfall. Turbulence and flow rates through the calciners are controlled to minimize blowback of the uranium oxide. Any blowback that does occur is entrapped by the entering uranium solution.

The calciners have seen minimal use since the end of enrichment operations, but are still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Glove Boxes

The five-inch can that collects the uranium oxide powder from each calciner is housed in a glove box to prevent the loss of the material. In addition, there is a separate glove box which is used for sampling the material in the can. The glove boxes have air locks for the entry and removal of work materials and are maintained under negative pressure during use. This negative pressure is produced by an exhaust fan drawing through a HEPA filter.

Like the calciners, the gloveboxes have seen minimal use since the end of enrichment operations, but are still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Storage Tank Vents

Uranium-bearing solutions awaiting treatment are stored in a manifold of five-inch diameter tanks inside the X-705 facility. All of these tanks are manifolded to a common pressure relief vent that has some potential to release radionuclides if the tanks are overfilled or overheated. Normal emissions should be zero since the stored liquids are quiescent, the dissolved radionuclides are non-volatile, and the vents are not open except during filling.

Emissions estimates from sources in the X-705 Decontamination Facility are included in the EDE calculations. Emissions from X-705 were modeled as a single source. The emissions from X-705 were estimated using the factors given in the Code of Federal Regulations, Title 40, Part 61, Appendix D, and are extremely conservative.

Laboratory Fume Hoods

Laboratory analysis of process and other samples is performed in the PORTS on-site laboratory in accordance with standard laboratory practices. There are no emissions controls on the lab hoods used in these procedures. The hoods should not exhibit any measurable radionuclide emissions during normal operation. Small amounts of technetium are partially volatilized by the analytical method approved by the Environmental Protection Agency under the Safe Drinking Water Act. There is also a possibility of a UF_6 sample container bursting during processing. This is an extremely rare occurrence, however, and cannot be regarded as normal operation as specified in the NESHAP regulations. Most laboratory fume hoods are located in the X-710 Laboratory. There are two fume hoods in the X-760 Chemical Engineering Building which operates as an adjunct to the X-710 Laboratory. These hoods were formerly used to prepare environmental samples such as soil, water, air, and vegetation samples for analysis in the X-710 Laboratory. The level of radionuclides in these samples is extremely low as evidenced by the analytical results. The X-705 Decontamination Facility has a small laboratory which contains three fume hoods which can be used to prepare samples and analyze materials being processed in the building.

Emissions from the X-710 Laboratory were estimated using the 40 CFR 61 Appendix D method. These estimates were included in the source term for the dose modeling using CAP88. The emissions from the X-710 were modeled as a single source.

The X-710 Laboratory has a Radioactive Material License from the State of Ohio and now expects to start accepting this work in 2005.

XT-847 Glove Box

The XT-847 Glove Box is a large stainless steel glove box which is used to batch small quantities of radioactively contaminated waste for more efficient and less costly storage, shipment, and disposal. The glove box is used primarily to batch spent alumina and other adsorbents used in control traps on process vents. When the adsorbent is removed from use, it is placed in a safe geometry container (5", 8" or 12" diameter, depending on assay). The material is then analyzed, and if the assay meets nuclear criticality safety limits, it is batched into larger containers including, but not limited to, 55 gallon drums. Other radiological materials may also be handled in the glove box.

<u>Room Air Exhausts</u>

Several uranium handling areas within the plant buildings have some potential for releasing minute ($\leq$1 gram) amounts of UF_6 into the room air. Releases of this size are characterized as small releases (visually resembling a puff of cigarette smoke). However, it should not be implied that any size release is acceptable or overlooked by PORTS. Studies conducted in the early 1980s demonstrated that a release of one gram of UF_6 produces a much larger release (smoke cloud) than what is normally observed during the operations discussed here. Ventilation exhausts from, and worker protection within these areas, are controlled according to the probability of releases occurring. Standard policy in the event of a release is to evacuate the area and remotely close down the local ventilation for confinement and subsequent decontamination.

Material feed and withdrawal areas occasionally have small releases when disconnecting UF_6 containers from process piping. These areas include the X-342A Feed and Fluorine Generation Facility, the X-343 Feed Facility, the X-344A Toll Transfer Facility, the X-330 Tails Withdrawal Area, the X-333 Low Assay Withdrawal Area, and the X-326 Extended Range Product and X-326 Product Withdrawal Areas. (Some of these areas ceased operation with the end of enrichment operations but all remain in place and are operable if needed.) These areas have dedicated ventilation exhausts for worker protection but no emission controls or continuous vent monitors (except at the X-344A Toll Transfer Facility). The plant's Health Physics (HP) Department samples the air inside these areas when operating for worker protection. The HP data indicates the average radionuclide concentrations inside the room are typically equivalent to natural background and, based on this, emissions from the room can be presumed to be environmentally insignificant.

The highest probability of internal releases besides the X-344A Sampling/Transfer Area, which was discussed in the previous section, is in the X-705 Decontamination Facility South Annex, where contaminated equipment is unsealed and disassembled. The South Annex has a separate HEPA filtered ventilation system and operates as a sealed area. Supplied air respirators are mandated for worker protection within the annex when the facility is in use. Normal emissions to the outside air should be negligible, which is consistent with past ambient monitoring performed by the plant's HP Department. The main operation in the South Annex during 2004 was the processing of spent technetium filters from the X-344. The filter media (a granular solid) is transferred from the filter itself to small NRC-approved containers by a HEPA filtered vacuum. This particular operation is new to PORTS and the additional emissions have been estimated based on the weight of filter media processed in 2003, laboratory analyses of filter media samples, and methods from 40 CFR 61 Appendix D.

The "cell floors" of the process buildings are subject to a lesser potential for unplanned releases when cascade components are being serviced or removed. Special worker protection ventilation systems for the cell floors are not considered necessary for several reasons, including the huge volume of air passing through the general ventilation systems (approximately 4,000 process motors are air-cooled by the general ventilation system) and the lower potential for a release. The cell floor air is sampled by the HP Department. The same results found in the material withdrawal areas are seen on the cell floor. Routine emissions levels from process building ventilation should be equal to natural background levels.

SECTION 2.0 AIR EMISSIONS DATA

Table 2.0 and Table 2.1 summarize the control device information for each source and give the distance and direction from each source to the nearest resident, school, office or business, and vegetable, meat, and milk-producing farms.

2.1 Radionuclide Emissions from Point Sources

The CAP88 model allows up to six sources to be modeled at one time, but assumes that all sources are located at the origin of the same circular grid. PORTS modeled its emissions as three co-located stacks sited at the actual location of the predominant source, the X-326 Tall Stack, up to 1995. From 1995 through 1997, USEC modeled its emissions from PORTS as nine individual release points at nine different locations to ensure that the impact of estimated emissions from grouped sources close to the downwind site boundary was not underestimated. This required nine different model runs that had to be combined manually, however.

In 1998, after consultation with USEPA-Region 5, the nine sources were re-grouped into three source groups. At that time, the source terms from the lesser sources in each group were typically an order of magnitude lower than the source term from the predominant source in that same group. In 2000, a tenth source (the XT-847 Glove Box Exhaust) was added to the list. In 2001, two more sources were added (the Cold Trap Vents in X-343 and X-344). Since then, the source groups have been re-organized, based on changing emission levels. See Table 2.2 for a description of the emission points for each modeled source.

Group 1 now includes the X-326 Stack, all other X-326 vents, all X-710 Laboratory vents and the XT-847 Glove Box Exhaust; these sources were modeled from the location of the X-326 Stack. Group 2 includes only the two X-344 vents; modeled from the location of X-344 Cold Trap Vent. Group 3 includes the X-330, X-333, X-343, X-700, X-705, and X-720 building vents; modeled from the middle of the X-705 Building.

The individual source terms and stack characteristics for each of the twelve sources are provided in Table 2.3 and Table 3.0 of this report.

2.2 Radionuclide Emissions from Fugitive and Diffuse Sources

There were no significant emissions of radionuclides from diffuse or fugitive sources at PORTS due to USEC operations.

Table 2.0 Point Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-326 Top Purge, Side Purge & E-jet (Cascades) (3 monitors)[b]	Chemical Adsorbents	0-95%[c]	1370 SE	5000 NNW	1520 SSE	4290 N	1370 E	8660 ENE
X-330 Cold Recovery/Wet Air Evacuation Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1690 ESE	3930 NNW	1370 W	3200 N	1520 ESE, W	8380 ENE
X-333 Cold Recovery Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-333 Wet Air Evacuation Vent	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-326 Seal Exhaust Area 6	Chemical Adsorbents	0-95%[c]	1430 E	4880 NNW	1620 SSE	4180 N	1340 E	8630 ENE
X-326 Seal Exhaust Area 5	Chemical Adsorbents	0-95%[c]	1460 E	4630 NNW	1540 WNW	3940 N	1340 E	5830 ENE
X-326 Seal Exhaust Area 4	Chemical Adsorbents	0-95%[c]	1500 ESE	4420 NNW	1460 WNW	3720 N	1340 E	8470 ENE

See notes on page 13.

Table 2.0 Point Sources, continued

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-330 Seal Exhaust Area 3	Chemical Adsorbents	0-95%[c]	1620 E	4080 NNW	1400 W	3360 N	1430 E	8400 ENE
X-330 Seal Exhaust Area 2	Chemical Adsorbents	0-95%[c]	1725 ESE	3690 NNW	1430 WSW	3020 N	1580 SE, W	8320 ENE
X-333 Seal Exhaust Area 1	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-343 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1070 ESE	3980 NW	2130 WSW	2980 N	1040 SSE	7620 ENE
X-344A Manifold Evacuation/ Gulper	HEPA Filters	99.97%	1830 ESE	3410 NNW	1460 WSW	2680 N	1830 SSE	8320 ENE
X-344 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1870 ESE	3380 NNW	1440 WSW	2660 N	1860 SSE	8340 ENE
XT-847 Glove Box	HEPA Filters	99.97%	640 SSW	5840 N	980 SE	5150 N	1300 S	9150 ENE

See notes on page 13.

Table 2.1 Grouped Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-705 Calciners (3)	Wet Scrubber	75%[e]	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-710 Laboratory Fume Hoods (39)	None	N/A	1260 E	4690 NNW	1660 WNW	3930 N	1130 E	8350 ENE
X-705 Decontamination Facility	One area HEPA Others none	99.97% N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-705 Storage Tank Vents	None	N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-700 Cleaning Building	HEPA Filters	99.97%	1220 ESE	3910 NNW	1910 W	3200 N	930 E	7840 ENE
X-720 Maintenance Facility	None	N/A	1220 E	4250 NNW	1800 W	3430 N	1010 E	7880 ENE
Room Air Exhausts	None	N/A	850 ESE	3410 NNW	1370 W	2680 N	760 SE	7560 ENE

See notes on page 13.

	Notes to Tables in Section 2.0
a	All sources in Table 2.0 have continuous vent monitors except the XT-847 Glove Box.
b	The Top and Side Purge Cascade vent streams pass separately through activated alumina traps. A third line, the Emergency Jet, connects to both lines through block valves. All three lines have continuous samplers. The three vent lines connect to four exhaust pipes that extend above the 50-meter tower. The Top Purge jet is vented directly through one pipe. The Side Purge Jet and Emergency Jet lines are interconnected to the other three pipes.
c	Chemical adsorbents (such as activated alumina and sodium fluoride) are approximately 95 percent effective at concentrations above 1 ppm. Below this concentration, chemical adsorbents have reduced efficiency or no effect. Normal concentrations entering the Purge Cascade Chemical Traps are near or below 1 ppm. The sample traps (which follow the control traps) use activated alumina hydrated to 14 percent moisture content, which is much more effective due to an instantaneous reaction of gaseous UF_6 and Tc with the water to form particulate matter.
d	Based on process knowledge, cold traps are estimated to be approximately 90 to 95 percent effective in trapping gaseous UF_6.
e	Scrubber efficiency is estimated to be approximately 75 percent but has not been rigorously measured. Normal emissions from the source are estimated to be negligible compared to monitored sources (<0.001 curies of uranium).

Table 2.2 Grouping of USEC Vents for Modeling

Source	Consists of	Modeled with Source
1	X-326 Top Purge Vent, Side Purge Vent and Emergency Jet Vent	1
2	X-326 Extended Range Product emissions, SE 6 Vent, SE 5 Vent and SE 4 Vent	1
3	X-330 Building Cell Evacuation/Cold Recovery Vent, SE 3 Vent and SE 2 Vent	7
4	X-333 Low Assay Withdrawal, Cold Recovery Vent, Building Wet Air Evacuation Vent, and SE 1 Vent	7
5	X-344 Gulper Vent	5
6	All X-700 vents	7
7	All X-705 vents	7
8	All X-710 vents	1
9	All X-720 vents	7
10	XT-847 Glove Box	1
11	X-343 Cold Trap Vent	7
12	X-344 Cold Trap Vent.	5

Table 2.3 Releases (in Curies) During CY 2004

NUCLIDE	USEC Sources												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
^{234}U	5.41E-06	5.79E-05	2.71E-04	0	2.44E-05	0	8.65E-03	8.07E-03	1.07E-06	1.81E-05	6.66E-03	1.24E-04	2.39E-02
^{235}U	7.12E-06	4.38E-06	1.54E-05	0	5.30E-06	0	2.90E-04	2.71E-04	3.59E-08	6.06E-07	3.14E-04	6.85E-06	9.14E-04
^{238}U	1.67E-06	6.21E-06	5.89E-05	0	1.13E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	6.93E-03	1.12E-04	8.48E-03
^{99}Tc	1.32E-03	3.40E-03	2.34E-03	0	7.02E-04	0	1.94E-03	1.81E-03	0	2.81E-04	1.20E-03	1.27E-03	1.43E-02
^{228}Th	0	0	0	0	3.62E-07	0	5.06E-12	0	0	0	7.00E-08	4.38E-08	4.76E-07
^{230}Th	0	0	0	0	1.24E-06	0	1.92E-11	0	0	0	4.18E-07	3.88E-07	2.04E-06
^{231}Th	7.12E-06	4.38E-06	1.54E-05	0	5.30E-06	0	2.90E-04	2.71E-04	3.59E-08	6.06E-07	3.14E-04	6.85E-06	9.14E-04
^{232}Th	0	0	0	0	0	0	3.02E-13	0	0	0	2.42E-08	0	2.42E-08
^{234}Th	1.67E-06	6.21E-06	5.89E-05	0	1.13E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	6.93E-03	1.12E-04	8.48E-03
^{234m}Pa	1.67E-06	6.21E-06	5.89E-05	0	1.13E-06	0	7.07E-04	6.60E-04	8.74E-08	1.48E-06	6.93E-03	1.12E-04	8.48E-03

Notes:

1. Sources 6 and 9 (X-700 & X-720) do not routinely process technetium. Equipment going to these buildings is first decontaminated in X-705 to strip all removable contamination. Therefore, emissions of Tc are estimated to be zero.

2. Source 6 is not known to have processed any removable uranium during 2004. Therefore, all uranium and uranium daughter emissions from this building are estimated to be zero.

SECTION 3.0 DOSE ASSESSMENT

3.1 Description of Dose Model

The radiation dose calculations were performed using the CAP88 package of computer codes. This package contains USEPA's most recent version of the AIRDOS-EPA computer code. This program implements a steady-state, Gaussian plume, atmospheric dispersion model to calculate environmental concentrations of released radionuclides. It also includes Regulatory Guide 1.109 food chain models to calculate human exposure, both internal and external, to radionuclides deposited in the environment. The human exposure values are then used by USEPA's DARTAB computer code to calculate radiation dose to man from the radionuclides released during the year. The dose calculations use dose conversion factors in the latest version of the RADRISK data file, which is provided by USEPA with the CAP88 package.

3.2 Summary of Input Parameters

Except for the radionuclide parameters given in Section 2.0 and those provided below, all important input parameter values used are the default values provided with the CAP88 computer codes and data bases.

Solubility Class:	All uranium isotopes:	D
	Technetium-99	D
	All uranium daughters	W
	All other thorium isotopes	W
AMAD:		1 μm
Meteorological data:		2004 data from onsite tower
Rainfall rate:		120.8 cm/year (CY 2004)
Average air temperature:		12.2 °C (CY 2004)
Average mixing layer height:		693 meters

Fraction of foodstuffs from:	Local Area	Within 50 mi	Beyond 50 mi*
Vegetables and produce	0.700	0.300	0.000
Meat	0.442	0.558	0.000
Milk	0.399	0.601	0.000

*The dose estimate for foodstuffs is very conservative when 0.0 is used as an input parameter in the category of foodstuffs consumed that were produced at a distance of 50 miles or more from the PORTS site. Realistically, it can be assumed that very little of the foodstuffs consumed by residents within a 50-mile radius of PORTS are produced within 50 miles of the PORTS site. The majority of the foodstuffs consumed are purchased at supermarkets that receive foodstuffs from all over the world.

3.3 Source Characteristics

Table 3.0 Source Characteristics

Source	Type	Release Height (m)	Inner Diamcter (m)	Gas Exit Velocity (m/s)	Gas Exit Temperature (°C)	Distance to Nearest Individual (m)	Direction to Nearest Individual
1	Point	50	0.25	18.0	35.0	1370	SE
2	Point	20	0.97	24.0	35.0	1430	E
3	Point	20	0.20	61.0	35.0	1620	E
4	Point	20	0.62	29.0	35.0	1330	ESE
5	Point	20	0.36	0.3	23.8	1830	ESE
6	Point	16	0.30	14.0	23.8	1220	ESE
7	Point	14	1.50	12.3	26.7	1330	ESE
8	Point	9	1.00	10.2	26.7	1260	E
9	Point	18	1.19	9.0	23.8	1220	E
10	Point	11	0.406	5.5	35.0	640	SSW
11	Point	33	0.076	9.3	23.8	1070	ESE
12	Point	15	0.35	0.4	23.8	1870	ESE

3.4 Compliance Assessment

In 1996, USEPA allowed USEC and DOE to submit separate reports for their areas of responsibility. However, each entity was directed to include the other's dose assessment values in its report in order to show the plant's total effect on the public.

The most exposed member of the public received an EDE of 0.025 mrem/yr (2.5×10^{-4} mSv/yr) from **USEC operations** and an additional 0.0057 mrem/yr (5.7×10^{-5} mSv/yr) from **DOE operations** for a total of 0.031 mrem/yr (3.1×10^{-4} mSv/yr) from **total plant operations**. This individual was located 1580 meters east-northeast of USEC's predominant emission sources (Source Group 3) and 640 meters east of DOE's predominant emission source (the X-624 Groundwater Treatment Facility).

The most exposed member of the public due solely to **USEC operations** was the most exposed individual due to **total plant operations** described in the previous paragraph. The most exposed member of the public due to **DOE operations** received an EDE of 0.0063 mrem/yr (6.3×10^{-5} mSv/yr) from **DOE operations** and an additional 0.021 mrem/yr (2.1×10^{-4} mSv/yr) from **USEC operations** for a total of 0.028 mrem/yr (2.8×10^{-4} mSv/yr) from **total plant operations**. This individual was located 671 meters east of DOE's predominant emission source and 1330 meters east-southeast of USEC's predominant emission sources.

SECTION 4.0 ADDITIONAL INFORMATION

4.1 Collective EDE (Person-Rem/Yr)

The Table 4.0 gives the 50-mile radius EDEs over the past ten years. The EDEs for the most exposed individual are also given for comparison. The 2004 collective EDE for persons living in the village of Piketon (~2070 persons) is 0.018 person-rem/yr.

Table 4.0 Annual Doses Due to PORTS (USEC) Airborne Emissions, 1995-2004[1]

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	EPA Std
EDE[2] (mrem/yr)	0.13	0.14	0.12	1.69	0.28	0.039	0.052	0.026	0.033	0.025	10
Collective EDE[3,4]	1.2	2.2	1.5	6.4	1.0	0.15	0.18	0.095	0.18	0.14	N/A

Notes to Table 4.0:

1. EDE values for 1995 are for total plant operations; since 1996, figures are for USEC operations only.

2. The most exposed individual (USEC operations only) in 2004 was located 1580 meters ENE of the X-705 Decontamination Facility.

3. Collective EDE in person-rem/yr for 50-mile radius. This is a summation of the dose to each individual living within a 50-mile radius.

4. Population distributions for calendar year 2001 onward were updated from 2000 census data.

4.2 New/Modified Sources

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process included filtering the liquid UF_6 through chemical absorbents to remove residual ^{99}Tc.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but have been out of service since the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

During 2002, the sampling and transfer of enriched UF_6 was consolidated at the Paducah GDP and the PORTS facilities dedicated to removing ^{99}Tc from contaminated UF_6 feedstock. Removal of ^{99}Tc contamination was a normal part of the sampling and transfer operation and no physical modifications were required. Technetium releases from the feedstock operation have been negligible (undetectable for the most part) and uranium activity releases have been reduced due to the lower assay being processed (less than one percent U-235 instead of up to five percent).

Since beginning the feedstock operation, however, it has become apparent that thorium and transuranics were also being collected and concentrated in the tech traps. Wipe samples of the process piping indicates that these nuclides are predominately confined to the immediate vicinity of the tech traps, but as a precaution ^{228}Th, ^{230}Th, ^{232}Th, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, and ^{241}Am were added to the weekly analyses for the X-343 and X-344 vent samplers beginning at the end of July 2002. As of the end of 2002, no transuranic isotopes had been detected in vent emissions and those analyses have been returned to their previous frequency. Individual thorium isotopes were detected seven times (out of 150 possible detections) between July and the end of 2002 though.

The annual thorium release is several orders of magnitude less than the uranium release, but these thorium isotopes have a much higher dose response than soluble uranium. Therefore, USEC conducted an analysis of the relative releases and their dose response (based on the stochastic Annual Limiting Intake published in Appendix B to 10 CFR 20). The result indicated that the thorium isotopes would contribute less than four percent of the total public dose even if assumed emissions at the detection limit were included. This is well under the ten percent standard for inclusion under 40 CFR 61.93(b)(4)(i). The issue was discussed with Mr. Mike Murphy of USEPA and it was decided to include quantifiable thorium emissions in the site's annual dose assessment, but to exclude assumed emissions where no thorium was detected.

To reduce the volume of low level radioactive waste generated by the feedstock project, PORTS began consolidating spent technetium absorbent rather than disposing of the filters as sealed units. The spent absorbent is transferred from the filter body into a small container using a HEPA filtered vacuum. This takes place in the X-705 South Annex, which is itself HEPA filtered. The closed containers are later consolidated in 55-gallon drums for disposal. Airborne emissions from this operation were estimated using Appendix D methods and added to the existing emission estimates for X-705. Aside from trace amounts of long-lived thorium isotopes, the additional emissions were not sufficient to change the previous emission estimates.

At the beginning of the feedstock project, X-343 primarily performed UF_6 sampling and replaced damaged UF_6 cylinder valves as needed. As the project proceeded, the number of cylinder valves that required replacement increased to the point that X-343 was refocused on this function starting in July 2003. This operation includes a post-maintenance test that includes pressurizing the cylinder with dry air to test for leakage, then evacuating the cylinder to a specified vacuum. It was expected that radionuclide emissions from X-343 would decrease since the UF_6 is not heated at any point during this operation. In actuality, the increased gas volume of dilute UF_6 from the testing resulted in a net increase in emissions through July 2003. X-343 operations were halted and administrative controls put in place prior to resuming operations in August. Engineered controls that increased the efficiency of the cold traps replaced the administrative controls in September 2003.

In mid-2004, the X-343 and X-344 were re-connected to the cascade to assist in the evacuation of residual material ("heels") from used UF_6 cylinders. Residual gasses from these buildings can now be sent to either the cold traps or back to the cascade.

Beginning in 2005, DOE has expanded the feedstock contract to include transferring UF_6 from DOE-owned "non-compliant" cylinders. This is an operation that USEC (and its predecessors) have performed on an "as-needed" basis for more than 40 years and will be carried out with existing equipment. Some of DOE's UF_6 stockpile is in cylinders that are not compliant with the current ANSI standard and, therefore, cannot be heated to liquefy the contained UF_6 under present safety standards. Instead, USEC will extract the UF_6 by sublimating the solid material directly into a gas under a vacuum and then condense the gas for storage in ANSI compliant cylinders. Historically, this operation has been carried out at room temperature and only when essential due to the slow sublimation rate of UF_6. To accelerate the sublimation process and maintain an acceptable margin of safety, USEC will modify the controls of two of its existing UF_6 autoclaves to maintain a reduced level of heating that cannot liquefy the UF_6. No new emissions are expected from this operation.

4.3 Unplanned Releases

No major unplanned releases occurred during calendar year 2004.

Minor releases occurred during attaching and detaching of lines to cylinders or when other anomalous conditions developed. The practice of as low as reasonably achievable (ALARA) is used to shut down the building ventilation system to prevent the release from reaching the atmosphere. Therefore, PORTS feels that the small releases should be considered insignificant.

SECTION 5.0 SUPPLEMENTAL INFORMATION

5.1 Radon Emissions

PORTS does not have and does not expect to have any ^{220}Rn emissions due to ^{232}U or ^{232}Th sources. PORTS does not manage any ^{232}U and consequently does not have any emissions of ^{220}Rn due to ^{232}U decay. Although PORTS does not specifically manage ^{232}Th, some amount is present due to ^{236}U decay and feedstock contamination. ^{236}U is itself a trace component of the uranium managed at PORTS, and its thorium daughter is extremely long-lived (half-life greater than 14 billion years). These figures indicate that no measurable concentrations of ^{220}Rn due to ^{232}Th decay will exist onsite within any foreseeable future.

The uranium processed at PORTS has previously been chemically purified at the mill to remove all naturally occurring elements including ^{226}Ra, which is the precursor of ^{222}Rn. It has been calculated that 10,000 years would be required before detectable levels of ^{222}Rn would occur due to the natural decay process.

5.2 Compliance with NESHAP Subpart H Requirements

During 2004, USEC had continuous emissions monitors (samplers) on fifteen point sources of the 37 point/grouped sources that represent what are historically the major emission sources at PORTS. Most of the continuously monitored point sources are not actually subject to the continuous monitoring requirement. USEC believes that all fifteen monitors comply with the requirements of 40 CFR 61.93(b) (i.e., they are equivalent to the EPA reference methods). USEPA-Region 5 conducted a detailed inspection of the vent sampling program during its NESHAP inspections during the weeks of March 15, 1993, and July 22, 1996. Although not explicitly stated in the final inspection reports, USEPA-Region 5 has accepted the stack sampling methodology. Further USEPA inspections of this program were conducted in 1994, 1995, 1998, and 2000.

The final 1993 NESHAP inspection report did not address the frequency or the methodology for periodic confirmatory measurements. USEPA has accepted engineering estimates, and USEC has made emissions estimates for all unmonitored radionuclide sources using the methods found in 40 CFR 61, Appendices D and E. Stack tests for radionuclides were made on six sources in 1989, and repeat testing was conducted on one source in 1993 as part of the process for renewal of the source's state air permit. The emissions estimates for all of the unmonitored sources were updated in 2000.

A NESHAP Compliance Plan was submitted by DOE in 1990 to document how PORTS planned to demonstrate compliance with the newly promulgated radionuclide NESHAP regulations in 40 CFR 61, Subpart H. The plan was revised and resubmitted in 1991 and 1992. USEC included continuous ambient air monitoring in its compliance plan to provide supporting evidence that no significant radionuclide emissions had been overlooked in the source monitoring program. However, USEPA-Region 5 never approved the use of ambient air monitoring to demonstrate USEC's compliance with the radiological NESHAP regulations on a continuing basis. The actions described in the plan were completed. On March 16, 1999, USEPA-Region 5 verbally agreed during a telephone conversation (POEF-520-99-038) that the compliance plan could now be considered a historical document.

PORTS has conducted an extensive stack and vent survey. Stacks with a potential to emit radionuclides have been identified and evaluated. See Attachment 1 for a listing of the radionuclide stacks/vents at PORTS.

5.3 Future Facilities

In February 2003, USEC, Inc. submitted a license application to the NRC to build and operate an American™ Centrifuge Lead Cascade at PORTS. NRC issued the license in March 2004. The Lead Cascade is being installed in the existing X-3001 Process Building and will use the existing building vent. USEC currently plans to have the Lead Cascade in operation in 2005.

The Lead Cascade will be a demonstration facility consisting of up to 240 individual centrifuges. The purpose of the Lead Cascade is to generate operability and economic data for a follow-on commercial centrifuge facility. The Lead Cascade will operate on full recycle with no UF_6 being withdrawn except samples for laboratory analysis. The total uranium inventory of the Lead Cascade will be only 250 kg UF6 (less than 0.125 Curies) and the maximum emission rate is predicted to be less than 0.001 Curie per week. Assuming that this emission rate was maintained for an entire year (which would shut down the cascade) the maximum predicted dose to a member of the public would still be only 0.023 mrem/yr. The Lead Cascade will have only one process vent, which will be equipped with a continuous vent monitor similar to the ones currently used on the X-343 and X-344 vents.

In August 2004, USEC, Inc. submitted a license application to the NRC for the follow-on commercial plant. The commercial plant will be installed in the existing GCEP buildings with some new construction (two small support buildings and several cylinder storage pads). This application is currently being reviewed by the NRC. A decision on this application is due by 2007.

Attachment 1
PORTS 2004 Potential and Actual Radiological Emissions Point Sources
(To USEC Air Emissions Annual Report [Under Subpart H, 40 CFR 61.94] Calendar Year 2004).

STACK NUMBER	DESCRIPTION
X-326-A-512	Seal Exhaust Vent Area 4
X-326-A-540	Seal Exhaust Vent Area 6
X-326-A-528	Seal Exhaust Vent Area 5
X-326-B-284	ERP Withdrawal Room Vent
X-326-P-2798	S-Jet Exhaust - Purge Cascade
X-326-P-2799	T-Jet Exhaust - Purge Cascade
X-326-P-616	E-Jet Exhaust - Purge Cascade
X-330-A-079	Tails Withdrawal Room Exhaust
X-330-A-262	Seal Exhaust Vent Area 2
X-330-A-272	X-330 Cold Recovery/Building Wet Air Evacuation Vent
X-330-A-279	Seal Exhaust Vent Area 3
X-330-P-3020	X-330 Building Wet Air Evacuation System (Inactive)
X-333-A-832	Low Assay Withdrawal (LAW) Seal Exhaust Vent
X-333-A-851	Seal Exhaust Vent Area 1
X-333-A-852	X-333 Cold Recovery Vent
X-333-P-856	X-333 Building Wet Air Evacuation Vent
X-333-B-862	LAW Station Room Exhaust
X-342A-A-974	Autoclave Exhaust
X-343-B-1015	Exhaust Fan AJ 108
X-343-P-1011	Autoclave Air Ejector
X-343-P-468	Cold Trap Vent
X-343-P-964	Air Jet
X-343-P-997	Autoclave Housing Relief Vent
X-343-P-998	Autoclave Housing Relief Vent
X-343-P-999	Autoclave Housing Relief Vent
X-344-B-956	Room Air Over Maintenance Shops

STACK NUMBER	DESCRIPTION
X-344-P-929	Gulper Exhaust
X-344-P-469	Cold Trap Vent
X-344A-A-937	Air Ejector
X-700-A-1032	Large Parts Shot Blaster
X-700-A-1037	X-700 Rad Calibration Lab Fume Hood
X-700-A-1043	Converter Repair Station
X-700-A-1053	Small Parts Glass Blaster
X-705-A-1348	Fume Hood
X-705-A-1426	X-705 Gulper System
X-705-A-2813	Small Cylinder Cleaning Unit
X-705-B-1369	Recovery Room Vent
X-705-B-1372	Uranium Solution Storage Vent
X-705-B-1379	Dissolver Storage Columns
X-705-B-1384	Compressor Dismantling Area
X-705-B-2810	Small Cylinder Pit Hood Exhaust
X-705-B-2811	Blue Room
X-705-B-2826	Complexing Hand Table Hood
X-705-B-3091	South Annex Exhaust
X-705-P-1353	X-705 "B" Loop Storage Slabs
X-705-P-1354	X-705 "A" Loop Storage Slabs
X-705-P-1361	T-Water Storage Columns
X-705-P-1364	Bi Uranyl Nitrate Storage Column
X-705-P-1366	Heavy Metals Storage Columns
X-705-P-1375	Caustic Precipitation Handtable Exhaust
X-705-P-1377	Air Jet Recovery
X-705-P-1382	Alumina Filter Tables
X-705-P-1404	Tunnel Vent Fan
X-705-P-1406	Nitric Acid Booth

STACK NUMBER	DESCRIPTION
X-705-P-1422	X-705 Calciner Glove Box
X-705-P-1424	Uranium Sampling & Blending Glove Box
X-705-P-1950	X-705 North Spray Tank
X-705-P-1951	High Assay Parts Cleaning Tables
X-705-P-1952	Group I Hand Table
X-705-P-1953	Small Parts Pit Cleaning Area
X-705-P-1954	Handtable
X-705-P-1960	Ion Exchange Vent
X-710-B-1655	EF 101 Room 111 Lab Hood
X-710-B-1656	EF 122 Room 120 Lab Hood
X-710-B-1657	EF 102 Room 111 Lab Hood
X-710-B-1658	EF 103 Room 111 Lab Hood
X-710-B-1659	EF 123 Room 120 Lab Hood
X-710-B-1661	EF 104 Room 111 Lab Hood
X-710-B-1666	EF 124 Room 120 Lab Hood
X-710-B-1667	EF 106 Room 111 Lab Hood
X-710-B-1668	EF 107 Room 111 Lab Hood
X-710-B-1669	EF 125 Room 120 Lab Hood
X-710-B-1671	EF 108 Room 111 Lab Hood
X-710-B-1673	EF 112 Room 111 Lab Hood
X-710-B-1674	EF 109 Room 111 Lab Hood
X-710-B-1675	EF 126 Room 120 Lab Hood
X-710-B-1676	EF 110 Room 111 Lab Hood
X-710-B-1677	EF 111 Room 111 Lab Vent
X-710-B-1679	EF 127 Room 120 Lab Hood
X-710-B-1681	EF 113 Room 111 Lab Hood
X-710-B-1682	EF 128 Room 120 Lab Hood
~~X-710-B-1685~~	~~EF 114 Room 111 Lab Hood~~

STACK NUMBER	DESCRIPTION
X-710-B-1686	EF 115 Room 111 Lab Hood
X-710-B-1687	EF 129 Room 120 Lab Hood
X-710-B-1688	EF 116 Room 111 Lab Hood
X-710-B-1692	EF 6 Room 112 Room Vent
X-710-B-1693	EF 117B Room 111 Lab Hood
X-710-B-1694	EF 130 Room 120 Lab Hood
X-710-B-1696	EF 234 Room 240 Lab Hood
X-710-B-1697	EF 117A Room 111 Lab Hood
X-710-B-1698	EF 118 Room 111 Lab Hood
X-710-B-1701	EF 274 Room 240 Lab Hood
X-710-B-1703	EF 167 Room 114 Lab Hood
X-710-B-1706	EF 235 Room 240 Lab Hood
X-710-B-1707	EF 166 Room 114 Lab Hood
X-710-B-1710	EF 275 Room 241 Lab Hood
X-710-B-1711	EF 119 Room 114 Lab Hood
X-710-B-1719	EF 120 Room 115 Lab Hood
X-710-B-1724	EF 238 Room 243 Lab Hood
X-710-B-1732	EF 128 Room 115 Lab Hood
X-710-B-1733	EF 133 Room 128 Lab Hood
X-710-B-1744	EF 223 Room 229 Lab Hood
X-710-B-1747	EF 225 Room 229 Lab Hood
X-710-B-1749	EF 228 Room 229 Lab Hood
X-710-B-1750	EF 229 Room 229 Lab Hood
X-710-B-1751	EF 227 Room 229 Lab Hood
X-710-B-1753	EF 230 Room 229 Lab Hood
X-710-B-1757	EF 239 Room 243 Lab Hood
X-710-B-1758	EF 240 Room 243 Lab Hood
X-710-B-1759	EF 241 Room 243 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1761	EF 270 Room 238 Lab Hood
X-710-B-1779	EF 265 Room 285 Lab Hood
X-710-B-1789	EF 256 Room 263 Lab Hood
X-710-B-1803	EF 162 Room 157 Lab Hood
X-710-B-1805	EF 161 Room 142 Lab Hood
X-710-B-1808	EF 159 Room 156 Lab Hood
X-710-B-1810	EF 158 Room 156 Lab Hood
X-710-B-1811	EF 157 Room 156 Lab Hood
X-710-B-1814	EF 156 Room 156 Lab Hood
X-710-B-1821	EF 143 Room 138 Lab Hood
X-710-B-1822	EF 142 Room 138 Lab Hood
X-710-B-1823	EF 199 Room 138 Lab Hood (AA Unit, has HEPA filter)
X-710-B-1825	EF 141 Room 138 Lab Hood
X-710-B-1830	EF 140 Room 135 Lab Hood
X-710-B-1832	EF 139 Room 135 Lab Hood
X-710-B-1836	EF 138 Room 135 Lab Hood
X-710-B-1838	EF 137 Room 135 Lab Hood
X-710-B-1841	EF 136 Room 135 Lab Hood
X-710-B-1847	EF 134 Room 135 Lab Hood
X-710-B-1849	EF 135 Room 135 Lab Hood
X-720-A-1874	Grit Blasting Room
X-720-A-1545	Motor Shop Steam Cleaning Booth
X-720-A-1904	X-720 Burn Off Oven
X-720-B-1515	Sample Bottle Exhaust
XT-847-B-3102	XT-847 Glove Box

Attachment 2

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and a complete representation of the emissions under United States Enrichment Corporation's control. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment (see 18 U.S.C. 1001).

Name: Patrick D. Musser
General Manager

Signature: Sandra L. Fout for PD Musser Date: 6-13-08

United States Enrichment Corporation (USEC)
Air Emissions Annual Report
(Under Subpart H, 40 CFR 61.94)
Calendar Year 2005

Site Name: Portsmouth Gaseous Diffusion Plant

Operator: United States Enrichment Corporation

Address: Post Office Box 628, Mail Stop 9030
3930 U.S. Route 23 South
Piketon, Ohio 45661

Contact: Pamela J Potter

Phone: (740) 897-4051

Owner: U.S. Department of Energy

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SECTION 1.0 FACILITY INFORMATION

1.1 Site Description

The Portsmouth Gaseous Diffusion Plant (PORTS) is owned by the Department of Energy (DOE). PORTS was operated by DOE until July 1, 1993. In 1992, Congress passed legislation amending the Atomic Energy Act of 1954 (the Act) to create the United States Enrichment Corporation, a government corporation, to operate the uranium enrichment enterprise in the United States. The government corporation began operation on July 1, 1993. In accordance with the Act, the United States Enrichment Corporation leased the production facilities at PORTS and its sister plant at Paducah, Kentucky from DOE. DOE retained operational control of most waste storage and handling facilities as well as all sites undergoing environmental restoration. In keeping with the Act, on July 28, 1998, the U.S. Department of the Treasury sold the uranium enrichment enterprise through an Initial Public Offering (IPO). USEC, Inc. officially became a private corporation on that date. The Portsmouth and Paducah gaseous diffusion plants are operated by a subsidiary of USEC, Inc., the United States Enrichment Corporation (USEC). In May 2001, USEC ceased uranium enrichment operations at PORTS. USEC continues to operate transfer facilities and certain support facilities at PORTS for the purpose of removing technetium (Tc) from off-specification uranium hexafluoride (UF_6) feed material. USEC also continues to maintain the enrichment cascade under contract to DOE.

The PORTS site is located in sparsely populated, rural Pike County, Ohio, on a 16.2-km^2 (6.3-mile^2) site about 1.6 km (1 mile) east of the Scioto River Valley at an elevation of approximately 36.6 m (120 ft) above the Scioto River floodplain. The terrain surrounding the plant, except for the Scioto River floodplain, consists of marginal farmland and densely forested hills. The Scioto River floodplain is farmed extensively, particularly with grain crops such as corn and soybeans.

Pike County has a generally moderate climate. Winters in Pike County are moderately cold, and summers are moderately warm and humid. The precipitation is usually well distributed with fall being the driest season. Prevailing winds at the site are out of the southwest to south. Average wind speeds are about 5 mph (8 km/h) although winds of up to 75 mph (121 km/h) have been recorded at the plantsite. Usually, high winds are associated with thunderstorms that occur in spring and summer. Southern Ohio lies within the Midwestern tornado belt, although no tornados have struck the plantsite to date.

Pike County has approximately 27,695 residents (2000 census data). Scattered rural development is typical; however, the county contains numerous small villages such as Piketon, Wakefield, and Jasper, which lie within a few kilometers of the plant. The county's largest community, Waverly, is about 19 km (12 miles) north of the plantsite and has a population of approximately 4,433 residents. Additional population centers within 80 km (50 miles) of the plant are Portsmouth (population 20,909), Chillicothe (population 21,796), and Jackson (population 6,184). The total population of the area lying within an 80-km (50-mile) radius of the plant is approximately 669,000.

USEC is responsible for the principal site process and support operations. Until May 2001, the principal site process was the separation of uranium isotopes through gaseous diffusion. From then until June 2002, the principal site process was quality control sampling, packaging and shipping of uranium enriched elsewhere. A normal part of the packaging process was the removal of residual technetium-99 (^{99}Tc) with chemical adsorbents. In June 2002, the transfer and sampling operations were consolidated at the Paducah Gaseous Diffusion Plant and the PORTS facilities were dedicated to removing ^{99}Tc from UF_6 feedstock prior to enrichment. In addition, USEC continues to remove UF_6 deposits from some of the enrichment equipment in situ and maintains the gaseous diffusion process equipment under contract to the DOE.

Support operations include the withdrawal of UF_6 from the deposit removal process, treatment of water for both potable and cooling purposes, steam generation for autoclave operation and heating purposes, decontamination of equipment removed from the process, recovery of uranium from various waste materials, treatment of industrial wastes generated onsite, and laboratory analysis of samples.. DOE is responsible for operations such as the X-326 "L-Cage" and its glove box, the X-345 High Assay Sampling Area (HASA), and site remediation activities. Because of the separation of responsibilities, DOE and USEC are submitting separate annual NESHAP reports and are certifying only those activities for which they have direct responsibility. The following section is a description of USEC's emissions sources.

1.2 Source Description

1.2.1 Radionuclides Used at the Facility

As discussed above, the principal site process was the separation of uranium isotopes as UF_6 until May 2001. From May 2001 until June 2002, UF_6 enriched in the ^{235}U isotope was received from the Paducah Gaseous Diffusion Plant located in Paducah, Kentucky for quality control sampling, transfer into customer-owned containers and shipment to customers. Since June 2002, unenriched UF_6 from both the Paducah and PORTS stockpiles has been sampled, processed to remove ^{99}Tc contamination, and re-packaged. Large quantities of UF_6 are located on the site. Some of the UF_6 contains trace quantities of other radionuclides introduced from DOE's practice during the years 1953 to 1975 of intermittently feeding reprocessed reactor fuel from government reactors in addition to unused UF_6. In particular, concentrations of ^{99}Tc in this material exceed the ASTM standard for nuclear fuel. PORTS is using chemical adsorbents to remove the ^{99}Tc from liquid UF_6. PORTS has also detected occasional traces of various thorium isotopes in the process equipment.

In May 2001, USEC ceased enrichment operations at the Portsmouth GDP. USEC is under contract to DOE to maintain the PORTS enrichment cascade. In addition, some of the equipment is being operated for deposit removal activities.

PORTS also uses a variety of sealed sources for calibration of equipment; however, none of this result in material releases and therefore is not used in the determination of the effective dose equivalent (EDE). Column 1of Table 2.3 lists the radionuclides used in the determination of the EDE.

1.2.2 Monitored and Unmonitored Sources

The sources discussed in this section are the significant or potentially significant contributors to airborne radionuclide emissions from USEC operations.

PORTS has reviewed the radiological emission sources on the plantsite and determined that fifteen had the greatest potential for emissions and equipped them with continuous emissions samplers (see Table 1.0). All fifteen are sampled continuously when operating by flow-proportional, isokinetic samplers to provide emissions data. Six of these sources (the purge cascades, the cold recovery systems, and the building wet air evacuation systems) are also monitored in real-time by ionization chamber instruments for operational control. Two of these sources (the X-343 and X-344 cold trap vents) are monitored in real-time by gamma detectors mounted on the continuous emission samplers for the same purpose. Laboratory analysis of the emissions samples is more sensitive, more accurate, and more reliable than either the ionization chambers or the gamma detectors but cannot provide real-time data required for process control.

Table 1.0 PORTS Monitored Emission Points

Location	Vent Identification Number
X-326 Top Purge Vent	X-326-P-2799
X-326 Side Purge Vent	X-326-P-2798
X-326 Emergency Jet Vent	X-326-P-616
X-326 Seal Exhaust Vent 6	X-326-A-540
X-326 Seal Exhaust Vent 5	X-326-A-528
X-326 Seal Exhaust Vent 4	X-326-A-512
X-330 Seal Exhaust Vent 3	X-330-A-279
X-330 Seal Exhaust Vent 2	X-330-A-262
X-333 Seal Exhaust Vent 1	X-333-A-851
X-330 Cold Recovery/Building Wet Air Evacuation Vent	X-330-A-272
X-333 Cold Recovery Vent	X-333-P-852
X-333 Building Wet Air Evacuation Vent	X-333-P-856
X-343 Cold Trap Vent	X-343-P-468
X-344 Gulper Vent	X-344-P-929
X-344 Cold Trap Vent	X-344-P-469

1.2.2.1 Monitored Sources

Top and Side Purge Cascades

The two purge cascades continuously separate light gases from process gas (UF_6) using gaseous diffusion. The separated process gas is returned to the operating cascade cells from the purge cascade. The light gases are split at the head of the purge cascades with enough "lights" being recycled to maintain normal operating flows and the balance being vented through chemical adsorbent traps to the atmosphere. The Side Purge Cascade and Top Purge Cascade typically operate in series at the very top of the main cascade. For operational control, each of the two purge cascades is monitored separately with real-time instruments called "space recorders".

Operation of the purge cascade(s) is required for continued operation of the main process cascade. Consequently, the two purge cascades are exhausted by three interconnected air jet eductors. The third eductor (the E-Jet) is an operating spare for either or both regular eductors. The eductors are interconnected to a set of four exhaust pipes. The pipes extend up a 50-meter freestanding tower to remove the emissions from the X-326 Process Building's wind wake. For compliance purposes, each of the three eductors is fitted with separate continuous samplers.

The Top Purge Cascade continues to operate to support the in-situ cell treatment and deposit removal activities mentioned above. The Side Purge Cascade is in standby with its associated eductor valved off. The E-Jet has continued to operate as needed, but has been needed only occasionally since May 2002. Both purge cascades and all three eductors remain available for use if needed.

Seal Exhaust Stations

The seal exhaust (SE) stations maintain a vacuum within cascade compressor shaft seals to prevent inleakage of wet air to the cascade. This vacuum is isolated from the compressor side of the seal by a buffer zone. Gases evacuated from the seals are pulled through chemical adsorbent traps by a bank of manifolded vacuum pumps and exhausted to the atmosphere through mist eliminators (for pump oil) and a roof vent. There is one seal exhaust station in each of the cascade's six "process areas", each being located adjacent to an area control room (ACR).

Two of the seal exhaust stations (Areas 1 and 2) have been shut down. The rest of the seal exhaust stations continue to operate to support the in-situ cell treatment and deposit removal activities. All of the seal exhaust stations are available for use if needed.

Cold Recovery Systems

The cold recovery systems are intermittently operated maintenance support systems used to prepare cascade equipment (e.g., cells) for internal maintenance. Process gas in cascade cells scheduled for maintenance is first evacuated to adjacent cascade cells to the extent practical. The cell is then isolated and alternately purged with dry nitrogen and evacuated to the Cold Recovery System. The evacuated gases pass through chilled vessels called "cold traps" to solidify any residual process gas. The non-condensable nitrogen carrier is passed through chemical adsorbents for polishing and then is vented by an air jet eductor to the atmosphere. Periodically, individual cold traps are valved off from the vent, and the trapped UF_6 is returned to the cascade by vaporization. There are two cold recovery systems operated at PORTS with one each in the X-330 and X-333 Process Buildings. In X-330, the cold recovery system shares a common vent and vent sampler with the building wet air evacuation system.

Only the X-330 Cold Recovery System continues to operate to support the in-situ cell treatment and deposit removal activities. Both of the Cold Recovery Systems are available for use if needed.

Building Wet Air Evacuation Systems

The building wet air evacuation systems are intermittently operated maintenance support systems used to prepare off-line cascade cells for return to service. The cell is alternately purged with dry nitrogen and evacuated to remove air and moisture from the cell. The evacuated gases are passed through chemical adsorbents to catch residual radionuclides (if any) and vented to the atmosphere by an air jet eductor. There are two building wet air evacuation systems, one associated with each of the cold recovery systems described above. In X-330, the cold recovery and building wet air evacuation systems share a common vent and sampler.

Only the X-330 Building Wet Air Evacuation System continues to operate to support the in-situ cell treatment and deposit removal activities. This system shares a common vent with the X-330 Cold Recovery System. Both of the Building Wet Air Evacuation Systems are available for use if needed.

X-343 and X-344 Cold Trap Areas

Under PORTS' historic configuration, autoclaves in the X-343 facility vaporized UF_6 in 14-ton cylinders to provide feed material for the enrichment cascade. Autoclaves in the X-344 facility liquefied enriched UF_6 in 14-ton or 10-ton cylinders for quality control sampling and transfer to 2.5-ton cylinders for shipment to customers. Residual gases evacuated from the autoclave process piping were returned to the cascade.

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process also included draining the liquid UF_6 through chemical adsorbents ("tech traps") to remove residual ^{99}Tc. In June 2002, all enriched material handling was consolidated at the Paducah GDP and the X-343 and X-344 facilities were dedicated to removing ^{99}Tc from out-of-specification UF_6 feedstock before it is enriched at the Paducah GDP. This operation continued through 2005.

A second routine part of the sampling and packaging operation was the replacement and testing of damaged or otherwise out-of-specification valves on the UF_6 cylinders. As the ^{99}Tc removal project has progressed, the number of valves needing replacement has increased and the X-343 was also used to replace and test cylinder valves since July 2004.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but were taken out of service after the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of the other monitored vents at PORTS.

X-344A Manifold Evacuation/Gulper

The X-344A UF_6 Sampling Building contains an automated sampling and transfer system for sampling the product and for filling customer cylinders with low assay UF_6. The term "assay" refers to the concentration of ^{235}U in weight percent. To avoid cross contamination between samples and to prevent emissions to the air, the sampling and transfer manifold was formerly evacuated back to the diffusion cascade through a line to the X-342 Feed Vaporization and Fluorine Generation Building and, since May 2001, to the X-344 Cold Trap System. In the event of a trace release occurring in spite of the purge and evacuation procedure, a "gulper" is mounted behind the manifold-to-cylinder connections. The gulper is simply a continuous vacuum nozzle, similar in principal to a lab hood, which draws any small releases from the room air into a filtration system. The filtration system has two filter banks, each consisting of a roughing filter followed by high efficiency particulate air (HEPA) filters and a centrifugal blower.

1.2.2.2 Unmonitored and Potential Sources

PORTS has several unmonitored minor and potential emission sources associated with USEC process support activities. Based on process knowledge and historical ambient monitoring data, none of these sources are believed to contribute significantly (i.e. in excess of 1% of the USEPA standard) to plant radionuclide emissions under normal operations.

The minor sources, as the term is used at PORTS, have some trace radionuclides in their routine emissions but only in negligible amounts under normal operating conditions. The potential sources are primarily room ventilation exhausts and/or pressure relief vents from areas that have a potential for an internal radionuclide release.

Since 1995, PORTS has included emissions estimates from unmonitored sources in the calculation of the EDE. As required by NESHAP regulations, these estimates have been updated for the 2005 calculations.

X-705 Decontamination Facility

Equipment that is removed from the PORTS cascade is covered at the point of removal and transported to the X-705 Decontamination Facility. Small parts may be cleaned in hand tables, while large parts may be sent through an automated tunnel. The hand tables consist of shallow acid baths where metal parts can be decontaminated by passive soaking. The hand tables have fume hoods over them to protect workers from acid fumes. Pressure relief vents are standard on such equipment. The tunnel is an enclosed series of "booths" that can decontaminate large parts by spraying with decontamination solutions as a small dolly carries the parts through the tunnel. The tunnel is ventilated to prevent a buildup of acid fumes. In all cases, radionuclides (uranium and technetium) are dissolved in the liquid phase and collected for recovery of the uranium. None of the radionuclides are volatilized through normal operation of these facilities and only trace radionuclides carried by entrained droplets would be expected.

Most of the X-705 Decontamination Facility has seen limited use since the end of enrichment operations, but is still available for use. The tunnel is presently out of service. The Uranium Recovery Area, where collected uranium-bearing solutions are treated for disposal, operates regularly however. Consequently, USEC continues to include the estimated emissions in its source term. These estimates were updated based on 2005 operational data and Appendix D methodology.

X-705 Calciners

Solutions are processed in the Uranium Recovery Area to yield a concentrated uranyl nitrate solution, which is converted into uranium oxide powder in one of two calciners located in X-705. A calciner consists of an inclined heated tube with the uranyl nitrate solution entering at the top and air entering at the bottom. The uranium is first dried and then oxidized as it passes down the tube. The uranium oxide powder is collected directly into a five-inch diameter storage can at the lower end of the calciner tube. The gaseous stream leaves the upper end of the calciner and is exhausted through a scrubber for NO_x control. Uranium is recovered from the spent scrubber solution through a microfiltration process and the effluent is discharged to a National Pollutant Discharge Elimination System permitted outfall. Turbulence and flow rates through the calciners are controlled to minimize blowback of the uranium oxide. Any blowback that does occur is entrapped by the entering uranium solution.

The calciners have seen minimal use since the end of enrichment operations, but do operate three to four weeks out of each year to dispose of uranyl nitrate solutions generated in the Uranium Recovery Area. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Glove Boxes

The five-inch can that collects the uranium oxide powder from each calciner is housed in a glove box to prevent the loss of the material. In addition, there is a separate glove box which is used for sampling the material in the can. The glove boxes have air locks for the entry and removal of work materials and are maintained under negative pressure during use. This negative pressure is produced by an exhaust fan drawing through a HEPA filter.

Like the calciners, the gloveboxes have seen minimal use since the end of enrichment operations, but do operate three to four weeks out of the year. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Storage Tank Vents

Uranium-bearing solutions awaiting treatment are stored in five-inch diameter tanks inside the X-705 facility. All of these tanks are manifolded to a common pressure relief vent that has some potential to release radionuclides if the tanks are overfilled or overheated. Normal emissions should be zero since the stored liquids are quiescent, the dissolved radionuclides are non-volatile, and the vents are not open except during filling.

Emissions estimates from sources in the X-705 Decontamination Facility are included in the EDE calculations. Emissions from X-705 were modeled as a single source. The emissions from X-705 were estimated using the factors given in the Code of Federal Regulations, Title 40, Part 61, Appendix D, and are extremely conservative.

Laboratory Fume Hoods

Laboratory analysis of process and other samples is performed in the PORTS on-site laboratory in accordance with standard laboratory practices. There are no emissions controls on the lab hoods used in these procedures. The hoods should not exhibit any measurable radionuclide emissions during normal operation. Small amounts of technetium are partially volatilized by the analytical method approved by the Environmental Protection Agency under the Safe Drinking Water Act. There is also a possibility of a UF_6 sample container bursting during processing. This is an extremely rare occurrence, however, and cannot be regarded as normal operation as specified in the NESHAP regulations. Most laboratory fume hoods are located in the X-710 Laboratory. There are two fume hoods in the X-760 Chemical Engineering Building which operates as an adjunct to the X-710 Laboratory. These hoods were formerly used to prepare environmental samples such as soil, water, air, and vegetation samples for analysis in the X-710 Laboratory. The level of radionuclides in these samples is extremely low as evidenced by the analytical results. The X-705 Decontamination Facility also has a small laboratory which contains three fume hoods which were used to prepare samples and analyze materials being processed in the building. This laboratory has been out of service for several years.

Emissions from the X-710 Laboratory were estimated using the 40 CFR 61 Appendix D method and 2005 thruput data. These estimates were included in the source term for the dose modeling using CAP88. The emissions from the X-710 were modeled as a single source.

The X-710 Laboratory has a Radioactive Material License from the State of Ohio.

XT-847 Glove Box

The XT-847 Glove Box is a large stainless steel glove box which is used to batch small quantities of radioactively contaminated waste for more efficient and less costly storage, shipment, and disposal. The glove box is used primarily to batch spent alumina and other adsorbents used in control traps on process vents. When the adsorbent is removed from use, it is placed in a safe geometry container (5", 8" or 12" diameter, depending on assay). The material is then analyzed, and if the assay meets nuclear criticality safety limits, it is batched into larger containers including, but not limited to, 55 gallon drums. Other radiological materials may also be handled in the glove box. The XT-847 Glovebox exhausts through a HEPA filter. Glovebox emissions were estimated using the 40 CFR 61 Appendix D method and 2005 thruput data.

Room Air Exhausts

Several uranium handling areas within the plant buildings have some potential for releasing minute ($\leq$1 gram) amounts of UF_6 into the room air. Releases of this size are characterized as small releases (visually resembling a puff of cigarette smoke). However, it should not be implied that any size release is acceptable or overlooked by PORTS. Studies conducted in the early 1980s demonstrated that a release of one gram of UF_6 produces a much larger release (smoke cloud) than what is normally observed during the operations discussed here. Ventilation exhausts from, and worker protection within these areas, are controlled according to the probability of releases occurring. Standard policy in the event of a release is to evacuate the area and remotely close down the local ventilation for confinement and subsequent decontamination.

Material feed and withdrawal areas occasionally have small releases when disconnecting UF_6 containers from process piping. These areas include the X-342A Feed and Fluorine Generation Facility, the X-343 Feed Facility, the X-344A UF_6 Sampling Building, the X-330 Tails Withdrawal Area, the X-333 Low Assay Withdrawal Area, and the X-326 Extended Range Product and X-326 Product Withdrawal Areas. These areas have dedicated ventilation exhausts for worker protection but no emission controls or continuous vent monitors (except at the X-344A UF_6 Sampling Building). The plant's Health Physics (HP) personnel sample the air inside these areas for worker protection. The HP data indicates the average radionuclide concentrations inside the room are typically equivalent to natural background and, based on this, emissions from the room can be presumed to be environmentally insignificant.

The highest probability of internal releases besides the X-344A Sampling/Transfer Area, which was discussed in the previous section, is in the X-705 Decontamination Facility South Annex. The South Annex was designed as a contained area with a separate HEPA filtered ventilation system where contaminated equipment could be opened and disassembled safely. Normal emissions to the outside air should be negligible, which is consistent with past ambient monitoring performed by the HP personnel. Current operations in the South Annex include changing of UF_6 cylinder valves and the processing of spent technetium filters from the X-344. The filter media (a granular solid) is transferred from the filter itself to small NCS-approved containers by a HEPA filtered vacuum. Emissions from the South Annex were estimated using the 40 CFR 61 Appendix D method and 2005 thruput data.

The "cell floors" of the process buildings are subject to a lesser potential for unplanned releases when cascade components are being serviced or removed. Special worker protection ventilation systems for the cell floors are not considered necessary for several reasons, including the huge volume of air passing through the general ventilation systems (approximately 4,000 process motors are air-cooled by the general ventilation system) and the lower potential for a release. The cell floor air is sampled by Health Physics personnel. The same results found in the material withdrawal areas are seen on the cell floor. Routine emissions levels from process building ventilation should be equal to natural background levels.

Maintenance Sources

There are several small maintenance sources (e.g., a grit blasting glovebox) in the X-700 Cleaning Building and the X-720 Stores and Maintenance Building that sometimes worked on radioactively contaminated equipment or material in the past. None of these sources still operate on radioactively contaminated materials and are not expected to do so at any time in the future. Since the sources themselves are still present, this report lists them as potential radioactive sources with emission rates of zero.

SECTION 2.0 AIR EMISSIONS DATA

Table 2.0 and Table 2.1 summarize the control device information for each source and give the distance and direction from each source to the nearest resident, school, office or business, and vegetable, meat, and milk-producing farms.

2.1 Radionuclide Emissions from Point Sources

The CAP88 model allows up to six sources to be modeled at one time, but assumes that all sources are located at the origin of the same circular grid. PORTS modeled its emissions as three co-located stacks sited at the actual location of the predominant source, the X-326 Tall Stack, up to 1995. From 1995 through 1997, USEC modeled its emissions from PORTS as nine individual release points at nine different locations to ensure that the impact of estimated emissions from grouped sources close to the downwind site boundary was not underestimated. This required nine different model runs that had to be combined manually, however.

In 1998, after consultation with USEPA-Region 5, the nine sources were re-grouped into three source groups. At that time, the source terms from the lesser sources in each group were typically an order of magnitude lower than the source term from the predominant source in that same group. In 2000, a tenth source (the XT-847 Glove Box Exhaust) was added to the list. In 2001, two more sources were added (the Cold Trap Vents in X-343 and X-344). Since then, the source groups have been re-organized, based on changing emission levels. See Table 2.2 for a description of the emission points for each modeled source.

Table 2.0 Point Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-326 Top Purge, Side Purge & E-jet (Cascades) (3 monitors)[b]	Chemical Adsorbents	0-95%[c]	1370 SE	5000 NNW	1520 SSE	4290 N	1370 E	8660 ENE
X-330 Cold Recovery/Wet Air Evacuation Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1690 ESE	3930 NNW	1370 W	3200 N	1520 ESE, W	8380 ENE
X-333 Cold Recovery Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-333 Wet Air Evacuation Vent	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-326 Seal Exhaust Area 6	Chemical Adsorbents	0-95%[c]	1430 E	4880 NNW	1620 SSE	4180 N	1340 E	8630 ENE
X-326 Seal Exhaust Area 5	Chemical Adsorbents	0-95%[c]	1460 E	4630 NNW	1540 WNW	3940 N	1340 E	5830 ENE
X-326 Seal Exhaust Area 4	Chemical Adsorbents	0-95%[c]	1500 ESE	4420 NNW	1460 WNW	3720 N	1340 E	8470 ENE

See notes on page 13.

Table 2.0 Point Sources, continued

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-330 Seal Exhaust Area 3	Chemical Adsorbents	0-95%[c]	1620 E	4080 NNW	1400 W	3360 N	1430 E	8400 ENE
X-330 Seal Exhaust Area 2	Chemical Adsorbents	0-95%[c]	1725 ESE	3690 NNW	1430 WSW	3020 N	1580 SE, W	8320 ENE
X-333 Seal Exhaust Area 1	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-343 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1070 ESE	3980 NW	2130 WSW	2980 N	1040 SSE	7620 ENE
X-344A Manifold Evacuation/ Gulper	HEPA Filters	99.97%	1830 ESE	3410 NNW	1460 WSW	2680 N	1830 SSE	8320 ENE
X-344 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1870 ESE	3380 NNW	1440 WSW	2660 N	1860 SSE	8340 ENE
XT-847 Glove Box	HEPA Filters	99.97%	640 SSW	5840 N	980 SE	5150 N	1300 S	9150 ENE

See notes on page 13.

Table 2.1 Grouped Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-705 Calciners (3)	Wet Scrubber	75%[e]	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-710 Laboratory Fume Hoods (39)	None	N/A	1260 E	4690 NNW	1660 WNW	3930 N	1130 E	8350 ENE
X-705 Decontamination Facility	One area HEPA Others none	99.97% N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-705 Storage Tank Vents	None	N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-700 Cleaning Building	HEPA Filters	99.97%	1220 ESE	3910 NNW	1910 W	3200 N	930 E	7840 ENE
X-720 Maintenance Facility	None	N/A	1220 E	4250 NNW	1800 W	3430 N	1010 E	7880 ENE
Room Air Exhausts	None	N/A	850 ESE	3410 NNW	1370 W	2680 N	760 SE	7560 ENE

See notes on page 13.

	Notes to Tables in Section 2.0
a	All sources in Table 2.0 have continuous vent monitors except the XT-847 Glove Box.
b	The Top and Side Purge Cascade vent streams pass separately through activated alumina traps. A third line, the Emergency Jet, connects to both lines through block valves. All three lines have continuous samplers. The three vent lines connect to four exhaust pipes that extend above the 50-meter tower. The Top Purge jet is vented directly through one pipe. The Side Purge Jet and Emergency Jet lines are interconnected to the other three pipes.
c	Chemical adsorbents (such as activated alumina and sodium fluoride) are approximately 95 percent effective at concentrations above 1 ppm. Below this concentration, chemical adsorbents have reduced efficiency or no effect. Normal concentrations entering the Purge Cascade Chemical Traps are near or below 1 ppm. The sample traps (which follow the control traps) use activated alumina hydrated to 14 percent moisture content, which is much more effective due to an instantaneous reaction of gaseous UF_6 and Tc with the water to form particulate matter.
d	Based on process knowledge, cold traps are estimated to be approximately 90 to 95 percent effective in trapping gaseous UF_6.
e	Scrubber efficiency is estimated to be approximately 75 percent but has not been rigorously measured. Normal emissions from the source are estimated to be negligible compared to monitored sources (<0.001 curies of uranium).

Table 2.2 Grouping of USEC Vents for Modeling

Source	Consists of	Modeled with Source
1	X-326 Top Purge Vent, Side Purge Vent and Emergency Jet Vent	1
2	X-326 Extended Range Product emissions, SE 6 Vent, SE 5 Vent and SE 4 Vent	1
3	X-330 Building Cell Evacuation/Cold Recovery Vent, SE 3 Vent and SE 2 Vent	7
4	X-333 Low Assay Withdrawal, Cold Recovery Vent, Building Wet Air Evacuation Vent, and SE 1 Vent (inactive)	7
5	X-344 Gulper Vent	5
6	All X-700 vents (inactive)	7
7	All X-705 vents	7
8	All X-710 vents	1
9	All X-720 vents (inactive)	7
10	XT-847 Glove Box	1
11	X-343 Cold Trap Vent	7
12	X-344 Cold Trap Vent.	5

Group 1 now includes the X-326 Stack, all other X-326 vents, all X-710 Laboratory vents and the XT-847 Glove Box Exhaust; these sources were modeled from the location of the X-326 Stack. Group 2 includes only the two X-344 vents; modeled from the location of X-344 Cold Trap Vent. Group 3 includes the X-330, X-333, X-343, X-700, X-705, and X-720 building vents; modeled from the middle of the X-705 Building. Three of the six buildings in Group 3; X-333, X-700 and X-720; had no active radioactive emission sources during 2005.

The individual source terms and stack characteristics for each of the twelve sources are provided in Table 2.3 and Table 3.0 of this report.

2.2 Radionuclide Emissions from Fugitive and Diffuse Sources

There were no significant emissions of radionuclides from diffuse or fugitive sources at PORTS due to USEC operations.

Table 2.3 Releases (in Curies) During CY 2005

NUCLIDE	USEC Sources												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
^{234}U	3.33E-06	3.66E-05	2.22E-04	0	6.19E-06	0	1.31E-04	3.86E-05	0	1.85E-05	2.59E-04	3.04E-04	1.02E-03
^{235}U	4.56E-06	4.39E-06	1.08E-05	0	3.87E-06	0	4.72E-06	3.61E-06	0	5.37E-08	1.44E-05	1.44E-05	6.09E-05
^{238}U	2.13E-06	6.14E-06	3.00E-05	0	1.25E-06	0	4.07E-05	4.18E-04	0	1.85E-05	2.62E-04	3.04E-04	1.08E-03
^{99}Tc	1.39E-03	3.49E-03	2.40E-3	0	8.21E-04	0	1.59E-04	4.88E-05	0	3.71E-04	1.16E-03	1.16E-03	1.10E-02
^{228}Th	0	0	0	0	2.44E-07	0	3.39E-10	3.74E-08	0	0	1.56E-08	0.00E+00	2.98E-07
^{230}Th	0	0	0	0	2.64E-06	0	3.40E-10	3.75E-08	0	0	9.93E-07	7.37E-07	4.41E-06
^{231}Th	4.56E-06	4.39E-06	1.08E-05	0	3.87E-06	0	4.72E-06	3.61E-06	0	5.37E-08	1.44E-05	1.44E-05	6.09E-05
^{232}Th	0	0	0	0	0.00E+00	0	2.07E-11	2.29E-09	0	0	4.69E-08	8.51E-08	1.34E-07
^{234}Th	2.13E-06	6.14E-06	3.00E-05	0	1.25E-06	0	4.07E-05	4.18E-04	0	1.85E-05	2.62E-04	3.04E-04	1.08E-03
^{234m}Pa	2.13E-06	6.14E-06	3.00E-05	0	1.25E-06	0	4.07E-05	4.18E-04	0	1.85E-05	2.62E-04	3.04E-04	1.08E-03

Notes:

1. Sources 4, 6 and 9 (X-333, X-700 & X-720) were inactive for radionuclide operations in 2005.

SECTION 3.0 DOSE ASSESSMENT

3.1 Description of Dose Model

The radiation dose calculations were performed using the CAP88 package of computer codes. This package contains USEPA's most recent version of the AIRDOS-EPA computer code. This program implements a steady-state, Gaussian plume, atmospheric dispersion model to calculate environmental concentrations of released radionuclides. It also includes Regulatory Guide 1.109 food chain models to calculate human exposure, both internal and external, to radionuclides deposited in the environment. The human exposure values are then used by USEPA's latest version of the DARTAB computer code to calculate radiation dose to man from the radionuclides released during the year. The dose calculations use dose conversion factors in the latest version of the RADRISK data file, which is provided by USEPA with the CAP88 package.

3.2 Summary of Input Parameters

Except for the radionuclide parameters given in Section 2.0 and those provided below, all important input parameter values used are the default values provided with the CAP88 computer codes and data bases.

Solubility Class:	All uranium isotopes:	D
	Technetium-99	D
	All uranium daughters	W
	All other thorium isotopes	W
AMAD:		1 µm
Meteorological data:		2005 data from onsite tower
Rainfall rate:		87.7 cm/year (CY 2005)
Average air temperature:		12.4 °C (CY 2005)
Average mixing layer height:		630 meters

Fraction of foodstuffs from:	Local Area	Within 50 mi	Beyond 50 mi*
Vegetables and produce	0.700	0.300	0.000
Meat	0.442	0.558	0.000
Milk	0.399	0.601	0.000

*The dose estimate for foodstuffs is very conservative when 0.0 is used as an input parameter in the category of foodstuffs consumed that were produced at a distance of 50 miles or more from the PORTS site. Realistically, it can be assumed that very little of the foodstuffs consumed by residents within a 50-mile radius of PORTS are produced within 50 miles of the PORTS site. The majority of the foodstuffs consumed are purchased at supermarkets that receive foodstuffs from all over the world.

3.3 Source Characteristics

Table 3.0 Source Characteristics

Source	Type	Release Height (m)	Inner Diameter (m)	Gas Exit Velocity (m/s)	Gas Exit Temperature (°C)	Distance to Nearest Individual (m)	Direction to Nearest Individual
1	Point	50	0.25	18.0	35.0	1370	SE
2	Point	20	0.97	24.0	35.0	1430	E
3	Point	20	0.20	61.0	35.0	1620	E
4	Point	20	0.62	29.0	35.0	1330	ESE
5	Point	20	0.36	0.3	23.8	1830	ESE
6	Point	16	0.30	14.0	23.8	1220	ESE
7	Point	14	1.50	12.3	26.7	1330	ESE
8	Point	9	1.00	10.2	26.7	1260	E
9	Point	18	1.19	9.0	23.8	1220	E
10	Point	11	0.406	5.5	35.0	640	SSW
11	Point	33	0.076	9.3	23.8	1070	ESE
12	Point	15	0.35	0.4	23.8	1870	ESE

3.4 Compliance Assessment

In 1996, USEPA allowed USEC and DOE to submit separate reports for their areas of responsibility. However, each entity was directed to include the other's dose assessment values in its report in order to show the plant's total effect on the public.

The most exposed member of the public received an EDE of 0.0025 mrem/yr (2.5×10^{-5} mSv/yr) from **USEC operations** and an additional 0.0096 mrem/yr (9.6×10^{-5} mSv/yr) from **DOE operations** for a total of 0.012 mrem/yr (1.2×10^{-4} mSv/yr) from **total plant operations**. This individual was located 1450 meters east of USEC's predominant emission sources (Source Group 3) and 579 meters east-southeast of DOE's predominant emission source (the X-624 Groundwater Treatment Facility).

The most exposed member of the public due solely to **DOE operations** was the most exposed individual due **total plant operations** described in the previous paragraph. The most exposed member of the public due to **USEC operations** received an EDE of 0.0029 mrem/yr (2.9×10^{-5} mSv/yr) from **USEC operations** and an additional 0.0050 mrem/yr (5.0×10^{-5} mSv/yr) from

DOE operations for a total of 0.0080 mrem/yr (8.0×10^{-5} mSv/yr) from **total plant operations**. This individual was located 2440 meters south of USEC's predominant emission source and 2926 meters south-southwest of DOE's predominant emission source.

SECTION 4.0 ADDITIONAL INFORMATION

4.1 Collective EDE (Person-Rem/Yr)

Table 4.0 gives the Collective EDEs (i.e., Population Doses) in person-rem/yr due to USEC operations over the past ten years. The Collective EDEs are given for the 50-mile radius population and the village of Piketon. The individual EDEs for the most exposed individual due to USEC operations are also given for comparison.

Table 4.0 Annual Doses Due to PORTS (USEC) Airborne Emissions, 1996-2005 [1]

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	EPA Std
50-mile EDE[2,4]	2.2	1.5	6.4	1.0	0.15	0.18	0.095	0.18	0.14	0.013	NA
Piketon EDE[3,4]	0.08	0.06	1.5	0.15	0.029	0.039	0.010	0.018	0.018	0.0002	NA
EDE[5] (mrem/yr)	0.14	0.12	1.69	0.28	0.039	0.052	0.026	0.033	0.025	0.0029	10

Notes to Table 4.0:

1. All dose figures in this table are for USEC operations only.
2. Collective EDE in person-rem/yr for 50-mile radius. This is a summation of the dose to each individual living within a 50-mile radius.
3. Collective EDE in person-rem/yr for the Village of Piketon. This is a summation of the dose to each individual living within the village.
4. Population distributions for calendar year 2001 onward were updated from 2000 census data.
5. The most exposed individual (USEC operations only) in 2005 was located 2440 meters south of the X-705 Decontamination Facility.

4.2 New/Modified Sources

No new or modified radiological sources were established by USEC in 2005.

The installation of the American Centrifuge Lead Cascade, with its one monitored vent, also continued through 2005 but no radioactive material was fed to this system by the end of the year.

4.3 Unplanned Releases

No major unplanned releases occurred during calendar year 2005.

Minor releases occurred during attaching and detaching of lines to cylinders or when other off-normal conditions developed. The practice of as low as reasonably achievable (ALARA) is used to shut down the building ventilation system to prevent the release from reaching the atmosphere. Therefore, PORTS believes that the small releases should be considered insignificant.

SECTION 5.0 SUPPLEMENTAL INFORMATION

5.1 Radon Emissions

PORTS does not have and does not expect to have any ^{220}Rn emissions due to ^{232}U or ^{232}Th sources. PORTS does not manage any ^{232}U and consequently does not have any emissions of ^{220}Rn due to ^{232}U decay. Although PORTS does not specifically manage ^{232}Th, some amount is present due to ^{236}U decay and feedstock contamination. ^{236}U is itself a trace component of the uranium managed at PORTS, and its thorium daughter is extremely long-lived (half-life greater than 14 billion years). These figures indicate that no measurable concentrations of ^{220}Rn due to ^{232}Th decay will exist onsite within any foreseeable future.

The uranium processed at PORTS has previously been chemically purified at the mill to remove all naturally occurring elements including ^{226}Ra, which is the precursor of ^{222}Rn. It has been calculated that 10,000 years would be required before detectable levels of ^{222}Rn would occur due to the natural decay process.

5.2 Compliance with NESHAP Subpart H Requirements

During 2005, USEC had continuous emissions monitors (samplers) on fifteen point sources of the 37 point/grouped sources that represent what are historically the major emission sources at PORTS. Most of the continuously monitored point sources are not actually subject to the continuous monitoring requirement. USEC believes that all fifteen monitors comply with the requirements of 40 CFR 61.93(b) (i.e., they are equivalent to the EPA reference methods). USEPA-Region 5 conducted a detailed inspection of the vent sampling program during its NESHAP inspections during the weeks of March 15, 1993, and July 22, 1996. Although not explicitly stated in the final inspection reports, USEPA-Region 5 has accepted the stack sampling methodology. Further USEPA inspections of this program were conducted in 1994, 1995, 1998, and 2000.

The final 1993 NESHAP inspection report did not address the frequency or the methodology for periodic confirmatory measurements. USEPA has accepted engineering estimates, and USEC has made emissions estimates for all unmonitored radionuclide sources using the methods found in 40 CFR 61, Appendices D and E. Stack tests for radionuclides were made on six sources in 1989, and repeat testing was conducted on one source in 1993 as part of the process for renewal of the source's state air permit. The emissions estimates for all of the unmonitored sources were updated in 2000 and updated again in 2005.

A NESHAP Compliance Plan was submitted by DOE in 1990 to document how PORTS planned to demonstrate compliance with the newly promulgated radionuclide NESHAP regulations in 40 CFR 61, Subpart H. The plan was revised and resubmitted in 1991 and 1992. USEC originally included continuous ambient air monitoring in its compliance plan to provide supporting evidence that no significant radionuclide emissions had been overlooked in the source monitoring program. However, USEPA-Region 5 never approved the use of ambient air monitoring to demonstrate USEC's compliance with the radiological NESHAP regulations on a continuing basis. The actions described in the plan were completed. On March 16, 1999, USEPA-Region 5 verbally agreed during a telephone conversation (POEF-520-99-038) that the compliance plan could now be considered a historical document.

PORTS has conducted an extensive stack and vent survey. Stacks with a potential to emit radionuclides have been identified and evaluated. See Attachment 1 for a listing of the radionuclide stacks/vents at PORTS.

5.3 Future Facilities

In February 2003, USEC, Inc. submitted a license application to the NRC to build and operate an American Centrifuge™ Lead Cascade at PORTS. NRC issued the license in March 2004. The Lead Cascade is to be installed in the existing X-3001 Process Building and will use the existing building vent. USEC currently plans to put the Lead Cascade in operation in 2006.

The Lead Cascade will be a demonstration facility licensed for up to 240 individual centrifuges and up to 250 Kg of UF_6. The purpose of the Lead Cascade is to generate operability and economic data for a follow-on commercial centrifuge facility. The Lead Cascade will operate on full recycle with no UF_6 being withdrawn except samples for laboratory analysis. The maximum emission rate is predicted to be less than 0.001 Curie per week. Assuming that this emission rate was maintained for an entire year (which would shut down the cascade) the maximum predicted dose to a member of the public would still be only 0.023 mrem/yr. The Lead Cascade will have only one process vent, which is equipped with a continuous vent monitor similar to the ones currently used on the X-343 and X-344 vents.

In August 2004, USEC, Inc. submitted a license application to the NRC for the follow-on commercial plant. The commercial plant will initially be installed in the existing GCEP buildings with some new construction (two small support buildings and several cylinder storage pads). This application is currently being reviewed by the NRC. A decision on this application is due in 2007.

Attachment 1

PORTS 2005 Potential and Actual Radiological Emissions Point Sources

(To USEC Air Emissions Annual Report [Under Subpart H, 40 CFR 61.94] Calendar Year 2005).

STACK NUMBER	DESCRIPTION
X-326-A-512	Seal Exhaust Vent Area 4
X-326-A-540	Seal Exhaust Vent Area 6
X-326-A-528	Seal Exhaust Vent Area 5
X-326-B-284	ERP Withdrawal Room Vent
X-326-P-2798	S-Jet Exhaust - Purge Cascade
X-326-P-2799	T-Jet Exhaust - Purge Cascade
X-326-P-616	E-Jet Exhaust - Purge Cascade
X-330-A-079	Tails Withdrawal Room Exhaust
X-330-A-262	Seal Exhaust Vent Area 2
X-330-A-272	X-330 Cold Recovery/Building Wet Air Evacuation Vent
X-330-A-279	Seal Exhaust Vent Area 3
X-330-P-3020	X-330 Building Wet Air Evacuation System (Inactive)
X-333-A-832	Low Assay Withdrawal (LAW) Seal Exhaust Vent
X-333-A-851	Seal Exhaust Vent Area 1
X-333-A-852	X-333 Cold Recovery Vent
X-333-P-856	X-333 Building Wet Air Evacuation Vent
X-333-B-862	LAW Station Room Exhaust
X-342A-A-974	Autoclave Exhaust
X-343-B-1015	Exhaust Fan AJ 108
X-343-P-1011	Autoclave Air Ejector
X-343-P-468	Cold Trap Vent
X-343-P-964	Air Jet
X-343-P-997	Autoclave Housing Relief Vent
X-343-P-998	Autoclave Housing Relief Vent
X-343-P-999	Autoclave Housing Relief Vent
X-344-B-956	Room Air Over Maintenance Shops

STACK NUMBER	DESCRIPTION
X-344-P-929	Gulper Exhaust
X-344-P-469	Cold Trap Vent
X-344A-A-937	Air Ejector
X-700-A-1032	Large Parts Shot Blaster
X-700-A-1037	X-700 Rad Calibration Lab Fume Hood
X-700-A-1043	Converter Repair Station
X-700-A-1053	Small Parts Glass Blaster
X-705-A-1348	Fume Hood
X-705-A-1426	X-705 Gulper System
X-705-A-2813	Small Cylinder Cleaning Unit
X-705-B-1369	Recovery Room Vent
X-705-B-1372	Uranium Solution Storage Vent
X-705-B-1379	Dissolver Storage Columns
X-705-B-1384	Compressor Dismantling Area
X-705-B-2810	Small Cylinder Pit Hood Exhaust
X-705-B-2811	Blue Room
X-705-B-2826	Complexing Hand Table Hood
X-705-B-3091	South Annex Exhaust
X-705-P-1353	X-705 "B" Loop Storage Slabs
X-705-P-1354	X-705 "A" Loop Storage Slabs
X-705-P-1361	T-Water Storage Columns
X-705-P-1364	Bi Uranyl Nitrate Storage Column
X-705-P-1366	Heavy Metals Storage Columns
X-705-P-1375	Caustic Precipitation Handtable Exhaust
X-705-P-1377	Air Jet Recovery
X-705-P-1382	Alumina Filter Tables
X-705-P-1404	Tunnel Vent Fan
X-705-P-1406	Nitric Acid Booth

STACK NUMBER	DESCRIPTION
X-705-P-1422	X-705 Calciner Glove Box
X-705-P-1424	Uranium Sampling & Blending Glove Box
X-705-P-1950	X-705 North Spray Tank
X-705-P-1951	High Assay Parts Cleaning Tables
X-705-P-1952	Group I Hand Table
X-705-P-1953	Small Parts Pit Cleaning Area
X-705-P-1954	Handtable
X-705-P-1960	Ion Exchange Vent
X-710-B-1655	EF 101 Room 111 Lab Hood
X-710-B-1656	EF 122 Room 120 Lab Hood
X-710-B-1657	EF 102 Room 111 Lab Hood
X-710-B-1658	EF 103 Room 111 Lab Hood
X-710-B-1659	EF 123 Room 120 Lab Hood
X-710-B-1661	EF 104 Room 111 Lab Hood
X-710-B-1666	EF 124 Room 120 Lab Hood
X-710-B-1667	EF 106 Room 111 Lab Hood
X-710-B-1668	EF 107 Room 111 Lab Hood
X-710-B-1669	EF 125 Room 120 Lab Hood
X-710-B-1671	EF 108 Room 111 Lab Hood
X-710-B-1673	EF 112 Room 111 Lab Hood
X-710-B-1674	EF 109 Room 111 Lab Hood
X-710-B-1675	EF 126 Room 120 Lab Hood
X-710-B-1676	EF 110 Room 111 Lab Hood
X-710-B-1677	EF 111 Room 111 Lab Vent
X-710-B-1679	EF 127 Room 120 Lab Hood
X-710-B-1681	EF 113 Room 111 Lab Hood
X-710-B-1682	EF 128 Room 120 Lab Hood
X-710-B-1685	EF 114 Room 111 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1686	EF 115 Room 111 Lab Hood
X-710-B-1687	EF 129 Room 120 Lab Hood
X-710-B-1688	EF 116 Room 111 Lab Hood
X-710-B-1692	EF 6 Room 112 Room Vent
X-710-B-1693	EF 117B Room 111 Lab Hood
X-710-B-1694	EF 130 Room 120 Lab Hood
X-710-B-1696	EF 234 Room 240 Lab Hood
X-710-B-1697	EF 117A Room 111 Lab Hood
X-710-B-1698	EF 118 Room 111 Lab Hood
X-710-B-1701	EF 274 Room 240 Lab Hood
X-710-B-1703	EF 167 Room 114 Lab Hood
X-710-B-1706	EF 235 Room 240 Lab Hood
X-710-B-1707	EF 166 Room 114 Lab Hood
X-710-B-1710	EF 275 Room 241 Lab Hood
X-710-B-1711	EF 119 Room 114 Lab Hood
X-710-B-1719	EF 120 Room 115 Lab Hood
X-710-B-1724	EF 238 Room 243 Lab Hood
X-710-B-1732	EF 128 Room 115 Lab Hood
X-710-B-1733	EF 133 Room 128 Lab Hood
X-710-B-1744	EF 223 Room 229 Lab Hood
X-710-B-1747	EF 225 Room 229 Lab Hood
X-710-B-1749	EF 228 Room 229 Lab Hood
X-710-B-1750	EF 229 Room 229 Lab Hood
X-710-B-1751	EF 227 Room 229 Lab Hood
X-710-B-1753	EF 230 Room 229 Lab Hood
X-710-B-1757	EF 239 Room 243 Lab Hood
X-710-B-1758	EF 240 Room 243 Lab Hood
X-710-B-1759	EF 241 Room 243 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1761	EF 270 Room 238 Lab Hood
X-710-B-1779	EF 265 Room 285 Lab Hood
X-710-B-1789	EF 256 Room 263 Lab Hood
X-710-B-1803	EF 162 Room 157 Lab Hood
X-710-B-1805	EF 161 Room 142 Lab Hood
X-710-B-1808	EF 159 Room 156 Lab Hood
X-710-B-1810	EF 158 Room 156 Lab Hood
X-710-B-1811	EF 157 Room 156 Lab Hood
X-710-B-1814	EF 156 Room 156 Lab Hood
X-710-B-1821	EF 143 Room 138 Lab Hood
X-710-B-1822	EF 142 Room 138 Lab Hood
X-710-B-1823	EF 199 Room 138 Lab Hood (AA Unit, has HEPA filter)
X-710-B-1825	EF 141 Room 138 Lab Hood
X-710-B-1830	EF 140 Room 135 Lab Hood
X-710-B-1832	EF 139 Room 135 Lab Hood
X-710-B-1836	EF 138 Room 135 Lab Hood
X-710-B-1838	EF 137 Room 135 Lab Hood
X-710-B-1841	EF 136 Room 135 Lab Hood
X-710-B-1847	EF 134 Room 135 Lab Hood
X-710-B-1849	EF 135 Room 135 Lab Hood
X-720-A-1874	Grit Blasting Room
X-720-A-1545	Motor Shop Steam Cleaning Booth
X-720-A-1904	X-720 Burn Off Oven
X-720-B-1515	Sample Bottle Exhaust
XT-847-B-3102	XT-847 Glove Box

Attachment 2

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and a complete representation of the emissions under United States Enrichment Corporation's control. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment (see 18 U.S.C. 1001).

Name: R. Wray Jordan
General Manager

Signature: ____________________ Date:

United States Enrichment Corporation (USEC)
Air Emissions Annual Report
Under Subpart H, 40 CFR 61.94
Calendar Year 2006

Site Name: Portsmouth Gaseous Diffusion Plant

Operator: United States Enrichment Corporation

Address: Post Office Box 628, Mail Stop 9030
3930 U.S. Route 23 South
Piketon, Ohio 45661

Contact: Pamela J Potter

Phone: (740) 897-4051

Owner: U.S. Department of Energy

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SECTION 1.0 FACILITY INFORMATION

The Portsmouth Gaseous Diffusion Plant (PORTS) is owned by the Department of Energy (DOE). PORTS was operated by DOE until July 1, 1993. In 1992, Congress passed legislation amending the Atomic Energy Act of 1954 (the Act) to create the United States Enrichment Corporation (USEC), a government-owned corporation, to operate the uranium enrichment enterprise in the United States. The corporation began operation on July 1, 1993. In accordance with the Act, USEC leased the production facilities at PORTS and its sister plant at Paducah, Kentucky from DOE. DOE retained operational control of most waste storage and handling facilities as well as all sites undergoing environmental restoration. In keeping with the Act, on July 28, 1998, the U.S. Department of the Treasury sold the uranium enrichment enterprise through an Initial Public Offering to create USEC, Inc. The original corporation, USEC, became a wholly owned subsidiary of USEC, Inc and continues to operate/maintain the two uranium enrichment plants.

In May 2001, USEC ceased uranium enrichment operations at PORTS. USEC continues to operate transfer facilities and certain support facilities at PORTS for the purpose of removing technetium from off-specification uranium hexafluoride (UF_6) feed material. USEC also continues to remove uranium deposits from the enrichment cascade under contract to DOE. In addition, a separate division of USEC, Inc is installing and operating the Lead Cascade of the American Centrifuge Plant in existing buildings at PORTS. USEC, Inc has recently received an NRC License for a follow-on commercial American Centrifuge Plant in the same location.

The management of the new centrifuge facility is separate from the management of the older enrichment facility. For this reason, the senior corporate officials for both facilities are certifying this report for their own respective activities.

1.1 Site Description

The PORTS site is located in sparsely populated, rural Pike County, Ohio, on a 16.2-km^2 (6.3-$mile^2$) site about 1.6 km (1 mile) east of the Scioto River Valley at an elevation of approximately 36.6 m (120 ft) above the Scioto River floodplain. The terrain surrounding the plant, except for the Scioto River floodplain, consists of marginal farmland and densely forested hills. The Scioto River floodplain is farmed extensively, particularly with grain crops such as corn and soybeans.

Pike County has a generally moderate climate. Winters in Pike County are moderately cold, and summers are moderately warm and humid. The precipitation is usually well distributed with fall being the driest season. Prevailing winds at the site are out of the southwest to south. Average wind speeds are about 5 mph (8 km/h) although winds of up to 75 mph (121 km/h) have been recorded at the plantsite. Usually, high winds are associated with thunderstorms that occur in spring and summer. Southern Ohio lies within the Midwestern tornado belt, although no tornados have struck the plantsite to date.

Pike County has approximately 27,695 residents (2000 census data). Scattered rural development is typical; however, the county contains numerous small villages such as Piketon, Wakefield, and

Jasper, which lie within a few kilometers of the plant. The county's largest community, Waverly, is about 19 km (12 miles) north of the plantsite and has a population of approximately 4,433 residents. Additional population centers within 80 km (50 miles) of the plant are Portsmouth (population 20,909), Chillicothe (population 21,796), and Jackson (population 6,184). The total population of the area lying within an 80-km (50-mile) radius of the plant is approximately 669,000.

USEC is responsible for the principal site process and support operations. Until May 2001, the principal site process was the separation of uranium isotopes through gaseous diffusion. From then until June 2002, the principal site process was quality control sampling, packaging and shipping of uranium enriched elsewhere. A normal part of the packaging process was the removal of residual technetium-99 (^{99}Tc) with chemical adsorbents. In June 2002, the transfer and sampling operations were consolidated at the Paducah Gaseous Diffusion Plant and the PORTS facilities were dedicated to removing ^{99}Tc from UF_6 feedstock prior to enrichment. In addition, USEC continues to remove UF_6 deposits from some of the enrichment equipment in situ under contract to the DOE.

Support operations include the withdrawal of UF_6 from the deposit removal process, treatment of water for both potable and cooling purposes, steam generation for autoclave operation and heating purposes, decontamination of equipment removed from the process, recovery of uranium from various waste materials, treatment of industrial wastes generated onsite, and laboratory analysis of samples. DOE is responsible for operations such as the X-326 "L-Cage" and its glove box, the X-345 High Assay Sampling Area (HASA), and site remediation activities. Because of the separation of responsibilities, DOE and USEC are submitting separate annual NESHAP reports and are certifying only those activities for which they have direct responsibility. The following section is a description of USEC's emissions sources.

1.2 Source Description

1.2.1 Radionuclides Used at the Facility

As discussed above, the principal site process was the separation of uranium isotopes as UF_6 by the gaseous diffusion process until May 2001. Some of the equipment continues to be operated for deposit removal activities under contract with the DOE. From May 2001 until June 2002, UF_6 enriched in the ^{235}U isotope was received from the Paducah Gaseous Diffusion Plant located in Paducah, Kentucky for quality control sampling, transfer into customer-owned containers and shipment to customers. Since June 2002, unenriched UF_6 from both the Paducah and PORTS stockpiles has been sampled, processed to remove ^{99}Tc contamination, and re-packaged. Some of the UF_6 stockpiles owned by both USEC, Inc and DOE contain trace quantities of other radionuclides introduced from DOE's practice during the years 1953 to 1975 of intermittently feeding reprocessed reactor fuel from government reactors in addition to unused UF_6. In particular, concentrations of ^{99}Tc in this material exceed the current ASTM standard for nuclear fuel. PORTS is using chemical adsorbents to remove the ^{99}Tc from liquid UF_6. PORTS has also detected occasional traces of various thorium isotopes, mostly commonly ^{230}Th, in some of the older UF_6.

In October 2006, USEC, Inc introduced UF_6 to the American Centrifuge Lead Cascade. This is a pilot plant and demonstration facility for a new centrifuge-based enrichment plant to be built on the site of, and re-using the infrastructure of, DOE's cancelled Gas Centrifuge Enrichment Plant (GCEP). The Lead Cascade will operate for up to five years on total recycle to generate process operating and economic data and is limited by its NRC License to a total of 250 kg of UF_6 in the entire system. Both the Lead Cascade and the follow-on commercial plant will use feedstock that complies with the ASTM standard for UF_6 feedstock, so no detectable levels of other radionuclides in their emissions are anticipated.

PORTS also uses a variety of sealed sources for calibration of equipment; however, none of this results in material releases and therefore is not used in the determination of the effective dose equivalent (EDE). Column 1 of Table 2.3 lists the radionuclides used in the determination of the EDE.

1.2.2 Monitored and Unmonitored Sources

Table 1.0 PORTS Monitored Emission Points

Location	Vent Identification Number
X-326 Top Purge Vent	X-326-P-2799
X-326 Side Purge Vent	X-326-P-2798
X-326 Emergency Jet Vent	X-326-P-616
X-326 Seal Exhaust Vent 6	X-326-A-540
X-326 Seal Exhaust Vent 5	X-326-A-528
X-326 Seal Exhaust Vent 4	X-326-A-512
X-330 Seal Exhaust Vent 3	X-330-A-279
X-330 Seal Exhaust Vent 2	X-330-A-262
X-333 Seal Exhaust Vent 1	X-333-A-851
X-330 Cold Recovery/Building Wet Air Evacuation Vent	X-330-A-272
X-333 Cold Recovery Vent	X-333-P-852
X-333 Building Wet Air Evacuation Vent	X-333-P-856
X-343 Cold Trap Vent	X-343-P-468
X-344 Gulper Vent	X-344-P-929
X-344 Cold Trap Vent	X-344-P-469
X-3001 North Purge Vacuum/Evacuation Vacuum Vent	X-3001-A-3111

PORTS has reviewed the radiological emission sources on the plantsite and determined that sixteen had the greatest potential for emissions and equipped them with continuous emissions samplers (see Table 1.0 above). All sixteen monitored sources are sampled continuously when operating by flow-proportional, isokinetic samplers to provide emissions data. Six of these sources (the purge cascades, the cold recovery systems, and the building wet air evacuation systems) are also monitored in real-time by ionization chamber instruments for operational control. Three of these sources (the X-343 and X-344 cold trap vents and the X-3001 PV/EV vent) are monitored in real-time by gamma detectors mounted on the continuous emission samplers for the same purpose. Laboratory analysis of the emissions samples is more sensitive, more accurate, and more reliable than either the ionization chambers or the gamma detectors but cannot provide real-time data required for process control.

1.2.2.1 Monitored Sources

Top and Side Purge Cascades

The two purge cascades continuously separate light gases from process gas (UF_6) using gaseous diffusion. The separated process gas is returned to the operating cascade cells from the purge cascade. The light gases are split at the head of the purge cascades with enough "lights" being recycled to maintain normal operating flows and the balance being vented through chemical adsorbent traps to the atmosphere. The Side Purge Cascade and Top Purge Cascade typically operate in series at the very top of the main cascade. For operational control, each of the two purge cascades is monitored separately with real-time instruments called “space recorders”.

Operation of the purge cascade(s) is required for continued operation of the main process cascade. Consequently, the two purge cascades are exhausted by three interconnected air jet eductors. The third eductor (the E-Jet) is an operating spare for either or both regular eductors. The eductors are interconnected to a set of four exhaust pipes. The pipes extend up a 50-meter freestanding tower to remove the emissions from the X-326 Process Building's wind wake. For compliance purposes, each of the three eductors is fitted with separate continuous samplers.

The Top Purge Cascade continues to operate to support the in-situ deposit removal activities mentioned above. The Side Purge Cascade is in standby with its associated eductor valved off. The E-Jet has continued to operate as needed, but has been needed only occasionally since May 2002 and not at all in 2006. Both purge cascades and all three eductors remain available for use if needed.

Seal Exhaust Stations

The seal exhaust (SE) stations maintain a vacuum within cascade compressor shaft seals to prevent inleakage of wet air to the cascade. This vacuum is isolated from the compressor side of the seal by a buffer zone. Gases evacuated from the seals are pulled through chemical adsorbent traps by a bank of manifolded vacuum pumps and exhausted to the atmosphere through mist eliminators (for pump oil) and a roof vent. There is one seal exhaust station in each of the cascade's six "process areas", each being located adjacent to the area control room (ACR).

Two of the seal exhaust stations (Areas 1 and 2) have been shut down. The rest of the seal exhaust stations continue to operate to support the in-situ deposit removal activities. All of the seal exhaust stations are available for use if needed.

Cold Recovery Systems

The cold recovery systems are intermittently operated maintenance support systems used to prepare cascade equipment (e.g., cells) for internal maintenance. Process gas in cascade cells scheduled for maintenance is first evacuated to adjacent cascade cells to the extent practical. The cell is then isolated and alternately purged with dry nitrogen and evacuated to the Cold Recovery System. The evacuated gases pass through chilled vessels called "cold traps" to solidify any residual process gas. The non-condensable nitrogen carrier is passed through chemical adsorbents for polishing and then is vented by to the atmosphere. Periodically, individual cold traps are valved off from the vent, and the trapped UF_6 is returned to the cascade by vaporization. There are two cold recovery systems operated at PORTS with one each in the X-330 and X-333 Process Buildings. In X-330, the cold recovery system shares a common vent and vent sampler with the building wet air evacuation system.

Only the X-330 Cold Recovery System continues to operate to support the in-situ deposit removal activities. Both of the Cold Recovery Systems are available for use if needed.

Building Wet Air Evacuation Systems

The building wet air evacuation systems are intermittently operated maintenance support systems used to prepare off-line cascade cells for return to service. The cell is alternately purged with dry nitrogen and evacuated to remove air and moisture from the cell. The evacuated gases are passed through chemical adsorbents to catch residual radionuclides (if any) and vented to the atmosphere. There are two building wet air evacuation systems, one associated with each of the cold recovery systems described above. In X-330, the cold recovery and building wet air evacuation systems share a common vent and sampler.

Only the X-330 Building Wet Air Evacuation System continues to operate to support the in-situ deposit removal activities. This system shares a common vent with the X-330 Cold Recovery System. Both of the Building Wet Air Evacuation Systems are available for use if needed.

X-343 and X-344 Cold Trap Areas

Under PORTS' historic configuration, autoclaves in the X-343 facility vaporized UF_6 in 14-ton cylinders to provide feed material for the enrichment cascade. Autoclaves in the X-344 facility liquefied enriched UF_6 in 14-ton or 10-ton cylinders for quality control sampling and transfer to 2.5-ton cylinders for shipment to customers. Residual gases evacuated from the autoclave process piping were returned to the cascade.

When enrichment operations ceased in 2001, the X-343 and X-344 facilities became the sampling and packaging facilities for UF_6 enriched at the Paducah GDP. This process also included draining the liquid UF_6 through chemical adsorbents to remove residual ^{99}Tc. In June 2002, all enriched material handling was consolidated at the Paducah GDP and the X-343 and X-344 facilities were dedicated to removing ^{99}Tc from out-of-specification UF_6 feedstock before it is enriched at the Paducah GDP. This operation continued through 2006.

A second routine part of the sampling and packaging operation was the replacement and testing of damaged or otherwise out-of-specification valves on the UF_6 cylinders. As the ^{99}Tc removal project has progressed, the number of valves needing replacement has increased and the X-343 was also used to replace and test cylinder valves since July 2004.

To deal with the residual gases without an operating enrichment cascade, cold trap systems similar to those in the cascade cold recovery areas were refurbished and upgraded in both facilities. (The cold trap systems were part of the original design of both facilities, but were taken out of service after the piping evacuation systems were redirected back to the cascade.) As part of the upgrades, both systems received new continuous vent samplers based on the continuous vent samplers used on other vents at PORTS. The new samplers are equipped with radiation monitors to track the accumulation of radioactive material in the sampler traps in real-time. This replaces the 1950's-style "space recorders" used for operational control of older monitored vents at PORTS.

X-344A Manifold Evacuation/Gulper

The X-344A UF_6 Sampling Building contains an automated sampling and transfer system for sampling the product and for filling customer cylinders with low assay UF_6. The term "assay" refers to the concentration of ^{235}U in weight percent. To avoid cross contamination between samples and to prevent emissions to the air, the sampling and transfer manifold was formerly evacuated back to the diffusion cascade through a line to the X-342 Feed Vaporization and Fluorine Generation Building and, since May 2001, to the X-344 Cold Trap System. In the event of a trace release occurring in spite of the purge and evacuation procedure, a "gulper" is mounted behind the manifold-to-cylinder connections. The gulper is simply a continuous vacuum nozzle, similar in principal to a lab hood, which draws any small releases from the room air into a filtration system. The filtration system has two filter banks, each consisting of a roughing filter followed by high efficiency particulate air (HEPA) filters and a centrifugal blower.

X-3001 North Purge Vacuum/Evacuation Vacuum

The X-3001 Process Building is one of two process buildings constructed for DOE's Gas Centrifuge Enrichment Plant in the 1980's. USEC is installing the American Centrifuge Lead Cascade, a demonstration and pilot plant for a new gas centrifuge-based uranium enrichment plant, in the north end of X-3001. The Purge Vacuum/Evacuation Vacuum (PV/EV) Vent is the only radiological vent associated with the Lead Cascade. The high-speed centrifuges in the Lead Cascade operate within a vacuum to eliminate gas friction and heating effects. The PV/EV systems exhaust light gases (e.g., air) from within the centrifuge's outer casing. The EV System is a high flow system used to evacuate new centrifuges prior to start-up. The PV system is a low flow system used to continuously evacuate operating centrifuge casings. Each of the four PV/EV vents serves half of a process building and the X-3001 North PV/EV vent is the only one in service. Gases evacuated by the PV/EV Systems are pulled through chemical adsorbent traps by manifolded vacuum pumps and exhausted to the atmosphere through a monitored roof vent similar to the seal exhaust systems in the GDP.

1.2.2.2 Unmonitored and Potential Sources

PORTS has several unmonitored minor and potential emission sources associated with USEC process support activities. Based on process knowledge and historical ambient monitoring data, none of these sources are believed to contribute significantly (i.e. in excess of 1% of the USEPA standard) to plant radionuclide emissions under normal operations.

The minor sources, as the term is used at PORTS, may have some trace radionuclides in their routine emissions but only in negligible amounts under normal operating conditions. The potential sources are primarily room ventilation exhausts and/or pressure relief vents from areas that have a potential for an internal radionuclide release.

Since 1995, PORTS has included emissions estimates from unmonitored sources in the calculation of the EDE. As required by NESHAP regulations, these estimates were updated based on 2000 and 2005 operational levels. The estimates are based on the methodology in Appendix D of 40 CFR 61.

X-705 Decontamination Facility

Equipment that is removed from the PORTS cascade is covered at the point of removal and transported to the X-705 Decontamination Facility. Small parts may be cleaned in hand tables, while large parts may be sent through an automated tunnel. The hand tables consist of shallow acid baths where metal parts can be decontaminated by passive soaking. The hand tables have fume hoods over them to protect workers from acid fumes. Pressure relief vents are standard on such equipment. The tunnel is an enclosed series of "booths" that can decontaminate large parts by spraying with decontamination solutions as a small dolly carries the parts through the tunnel. The tunnel is ventilated to prevent a buildup of acid fumes. In all cases, radionuclides (uranium and technetium) are dissolved in the liquid phase and collected for recovery of the uranium. None of the radionuclides are volatilized through normal operation of these facilities and only trace radionuclides carried by entrained droplets would be expected.

Most of the X-705 Decontamination Facility has seen limited or no use since the end of enrichment operations, but is still available for use. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Calciners

Solutions are processed in the Uranium Recovery Area to yield a concentrated uranyl nitrate solution, which is converted into uranium oxide powder in one of two calciners located in X-705. A calciner consists of an inclined heated tube with the uranyl nitrate solution entering at the top and air entering at the bottom. The uranium is first dried and then oxidized as it passes down the tube. The uranium oxide powder is collected directly into a five-inch diameter storage can at the lower end of the calciner tube. The gaseous stream leaves the upper end of the calciner and is exhausted through a scrubber for NO_x control. Uranium is recovered from the spent scrubber solution through a microfiltration process and the effluent is discharged to a National Pollutant Discharge Elimination System permitted outfall. Turbulence and flow rates through the calciners are controlled to minimize blowback of the uranium oxide. Any blowback that does occur is entrapped by the entering uranium solution.

The calciners have seen minimal use since the end of enrichment operations, but do operate occasionally. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Glove Boxes

The five-inch can that collects the uranium oxide powder from each calciner is housed in a glove box to prevent the loss of the material. In addition, there is a separate glove box which is used for sampling the material in the can. The glove boxes have air locks for the entry and removal of work materials and are maintained under negative pressure during use. This negative pressure is produced by an exhaust fan drawing through a HEPA filter.

Like the calciners, the gloveboxes have seen minimal use since the end of enrichment operations, but do operate occasionally. Consequently, USEC continues to include the estimated emissions in its source term.

X-705 Storage Tank Vents

Uranium-bearing solutions awaiting treatment are stored in five-inch diameter tanks inside the X-705 facility. All of these tanks are manifolded to a common pressure relief vent that has some potential to release radionuclides if the tanks are overfilled or overheated. Normal emissions should be zero since the stored liquids are quiescent, the dissolved radionuclides are non-volatile, and the vents are not open except during filling.

The storage tanks are in routine use, albeit with a very low thruput compared to historical levels. Consequently, emissions estimates from the storage tanks in the X-705 Decontamination Facility are included in the EDE calculations.

Laboratory Fume Hoods

Laboratory analysis of process and other samples is performed in the PORTS on-site laboratory in accordance with standard laboratory practices. There are no emissions controls on the lab hoods used in these procedures. The hoods should not exhibit any measurable radionuclide emissions during normal operation. Small amounts of technetium are partially volatilized by the analytical method approved by the Environmental Protection Agency under the Safe Drinking Water Act. There is also a possibility of a UF_6 sample container bursting during processing. This is an extremely rare occurrence, however, and cannot be regarded as normal operation as specified in the NESHAP regulations. Most laboratory fume hoods are located in the X-710 Laboratory. There are two fume hoods in the X-760 Chemical Engineering Building which operates as an adjunct to the X-710 Laboratory. These hoods were formerly used to prepare environmental samples such as soil, water, air, and vegetation samples for analysis in the X-710 Laboratory. The level of radionuclides in these samples is extremely low as evidenced by the analytical results. The X-705 Decontamination Facility also has a small laboratory which contains three fume hoods which were used to prepare samples and analyze materials being processed in the building. This laboratory has been out of service for several years.

The X-710 Laboratory is in routine use. Consequently, emission estimates were included in the source term for the dose modeling using CAP88. The emissions from the X-710 were modeled as a single source.

XT-847 Glove Box

The XT-847 Glove Box is a large stainless steel glove box which is used to batch small quantities of radioactively contaminated waste for more efficient and less costly storage, shipment, and disposal. The primary waste stream involved is spent alumina and other adsorbents used in control traps on process vents. When the adsorbent is removed from use, it is placed in a safe geometry container (5", 8" or 12" diameter, depending on assay). The material is then analyzed, and if the uranium content meets nuclear criticality safety limits, it is batched into larger containers including, but not limited to, 55 gallon drums. Other radiological materials may also be handled in the glove box. The XT-847 Glovebox exhausts through a HEPA filter and is in routine use.

Room Air Exhausts

Several uranium handling areas within the plant buildings have some potential for releasing minute ($\leq$1 gram) amounts of UF_6 into the room air. Releases of this size are characterized as small releases (visually resembling a puff of cigarette smoke). However, it should not be implied that any size release is acceptable or overlooked by PORTS. Studies conducted in the early 1980s demonstrated that a release of one gram of UF_6 produces a much larger smoke cloud than what is normally observed during the operations discussed here. Ventilation exhausts from, and worker protection within these areas, are controlled according to the probability of releases occurring. Standard policy in the event of a release is to evacuate the area and remotely close down the local ventilation for confinement and subsequent decontamination.

Material feed and withdrawal areas occasionally have small releases when disconnecting UF_6 containers from process piping. These areas include the X-342A Feed and Fluorine Generation Facility, the X-343 Feed Facility, the X-344A UF_6 Sampling Building, the X-330 Tails Withdrawal Area, the X-333 Low Assay Withdrawal Area, and the X-326 Extended Range Product and X-326 Product Withdrawal Areas. These areas have dedicated ventilation exhausts for worker protection but no emission controls or continuous vent monitors (except at the X-344A UF_6 Sampling Building). The plant's Health Physics (HP) personnel sample the air inside these areas for worker protection. The HP data indicates the average radionuclide concentrations inside the room are equivalent to natural background and, based on this, emissions from the room can be presumed to be environmentally insignificant.

The highest probability of internal releases besides the X-344A Sampling/Transfer Area, which was discussed in the previous section, is in the X-705 Decontamination Facility South Annex. The South Annex was designed as a contained area with a separate HEPA filtered ventilation system where contaminated equipment could be opened and disassembled safely. Normal emissions to the outside air should be negligible, which is consistent with past ambient monitoring performed by the HP personnel. Current operations in the South Annex include changing of UF_6 cylinder valves and the processing of spent technetium filters from the X-344. The filter media (a granular solid) is transferred from the filter itself to small NCS-approved containers by a HEPA filtered vacuum. The X-705 South Annex is in routine service.

The "cell floors" of the process buildings are subject to a lesser potential for unplanned releases when cascade components are being serviced or removed. Special worker protection ventilation systems for the cell floors are not considered necessary for several reasons, including the huge volume of air passing through the general ventilation systems (approximately 4,000 process motors are air-cooled by the general ventilation system) and the lower potential for a release. The cell floor air is sampled by Health Physics personnel. The same results found in the material withdrawal areas are seen on the cell floor. Routine emissions levels from process building ventilation should be equal to natural background levels.

Maintenance Sources

There are several small maintenance sources (e.g., a grit blasting glovebox) in the X-700 Cleaning Building and the X-720 Stores and Maintenance Building that sometimes worked on radioactively contaminated equipment or material in the past. None of these sources still operate on radioactively contaminated materials and are not expected to do so at any time in the future. Since the sources themselves are still present, this report lists them as potential radioactive sources with emission rates of zero.

SECTION 2.0 AIR EMISSIONS DATA

Table 2.0 and Table 2.1 summarize the control device information for each source and give the distance and direction from each source to the nearest resident, school, office or business, and vegetable, meat, and milk-producing farms.

2.1 Radionuclide Emissions from Point Sources

The CAP88 model allows up to six sources to be modeled at one time, but assumes that all sources are located at the origin of the same circular grid. PORTS modeled its emissions as three co-located stacks sited at the actual location of the predominant source, the X-326 Tall Stack, up to 1995. From 1995 through 1997, USEC modeled its emissions from PORTS as nine nominal sources at nine different locations to ensure that the impact of estimated emissions from grouped sources close to the downwind site boundary was not underestimated. This required nine different model runs that had to be combined manually, however.

In 1998, after consultation with USEPA-Region 5, the nine nominal sources were re-grouped into three locations, or source groups. At that time, the source terms from the lesser sources in each group were typically an order of magnitude lower than the source term from the predominant source in that same group. In 2000, a tenth source (the XT-847 Glove Box Exhaust) was added to the list. In 2001, two more sources were added (the Cold Trap Vents in X-343 and X-344). The source groups were also reorganized based on the changing emission levels. In 2006, a thirteenth nominal source was added, the American Centrifuge Lead Cascade in the X-3001 Process Building. This is modeled as a fourth source group because it is physically distant from all three of the existing source groups and will be joined by additional sources as the commercial American Centrifuge Plant is constructed.

Group 1 includes the X-326 Stack, all other X-326 vents, all X-710 Laboratory vents and the XT-847 Glove Box Exhaust; these sources were modeled from the location of the X-326 Stack. Group 2 includes only the two X-344 vents; modeled from the location of X-344 Cold Trap Vent. Group 3 includes the X-330, X-333, X-343, X-700, X-705, and X-720 building vents; modeled from the middle of the X-705 Building. Three of the six buildings in Group 3; X-333, X-700 and X-720; had no active radioactive emission sources during 2006. Group 4 includes only the single Lead Cascade Vent in X-3001.

Table 2.2 summarizes the grouping of the modeled sources. The individual source terms of the thirteen modeled sources are provided in Table 2.3 of this report. The physical characteristics of the modeled sources are provided in Table 3.0.

2.2 Radionuclide Emissions from Fugitive and Diffuse Sources

There were no significant emissions of radionuclides from diffuse or fugitive sources at PORTS due to USEC operations.

Table 2.0 Point Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-326 Top Purge, Side Purge & E-jet (Cascades) (3 monitors)[b]	Chemical Adsorbents	0-95%[c]	1370 SE	5000 NNW	1520 SSE	4290 N	1370 E	8660 ENE
X-330 Cold Recovery/Wet Air Evacuation Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1690 ESE	3930 NNW	1370 W	3200 N	1520 ESE, W	8380 ENE
X-333 Cold Recovery Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-333 Wet Air Evacuation Vent	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-326 Seal Exhaust Area 6	Chemical Adsorbents	0-95%[c]	1430 E	4880 NNW	1620 SSE	4180 N	1340 E	8630 ENE
X-326 Seal Exhaust Area 5	Chemical Adsorbents	0-95%[c]	1460 E	4630 NNW	1540 WNW	3940 N	1340 E	5830 ENE
X-326 Seal Exhaust Area 4	Chemical Adsorbents	0-95%[c]	1500 ESE	4420 NNW	1460 WNW	3720 N	1340 E	8470 ENE

See notes on page 16.

Table 2.0 Point Sources, continued

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-330 Seal Exhaust Area 3	Chemical Adsorbents	0-95%[c]	1620 E	4080 NNW	1400 W	3360 N	1430 E	8400 ENE
X-330 Seal Exhaust Area 2	Chemical Adsorbents	0-95%[c]	1725 ESE	3690 NNW	1430 WSW	3020 N	1580 SE, W	8320 ENE
X-333 Seal Exhaust Area 1	Chemical Adsorbents	0-95%[c]	1330 ESE	3840 NNW	1860 WSW	2960 N	1230 SE	7890 ENE
X-343 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1070 ESE	3980 NW	2130 WSW	2980 N	1040 SSE	7620 ENE
X-344A Manifold Evacuation/ Gulper	HEPA Filters	99.97%	1830 ESE	3410 NNW	1460 WSW	2680 N	1830 SSE	8320 ENE
X-344 Cold Trap Vent	Cold Traps Chemical Adsorbents	90-95%[d] 0-95%[c]	1870 ESE	3380 NNW	1440 WSW	2660 N	1860 SSE	8340 ENE
XT-847 Glove Box	HEPA Filters	99.97%	640 SSW	5840 N	980 SE	5150 N	1300 S	9150 ENE

See notes on page 16.

Table 2.0 Point Sources, continued

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-3001 North PV/EV Vent	Chemical Adsorbents	0-95%[c]	1100 W	5110 N	1320 WSW	4450 N	1550 SSE	9270 ENE

See notes on page 16.

Table 2.1 Grouped Sources

Point Source[a]	Control Device	Control Efficiency	Distance in Meters to the Nearest:					
			Resident	School	Office or Business	Farm		
						Milk	Meat	Veg.
X-705 Calciners (3)	Wet Scrubber	75%[e]	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-710 Laboratory Fume Hoods (39)	None	N/A	1260 E	4690 NNW	1660 WNW	3930 N	1130 E	8350 ENE
X-705 Decontamination Facility	One area HEPA Others none	99.97% N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-705 Storage Tank Vents	None	N/A	1330 ESE	4020 NNW	1800 W	3200 N	1050 ESE	7960 ENE
X-700 Cleaning Building	HEPA Filters	99.97%	1220 ESE	3910 NNW	1910 W	3200 N	930 E	7840 ENE
X-720 Maintenance Facility	None	N/A	1220 E	4250 NNW	1800 W	3430 N	1010 E	7880 ENE
Room Air Exhausts	None	N/A	850 ESE	3410 NNW	1370 W	2680 N	760 SE	7560 ENE

See notes on page 16.

	Notes to Tables in Section 2.0
a	All sources in Table 2.0 have continuous vent monitors except the XT-847 Glove Box.
b	The Top and Side Purge Cascade vent streams pass separately through activated alumina traps. A third line, the Emergency Jet, connects to both lines through block valves. All three lines have continuous samplers. The three vent lines connect to four exhaust pipes that extend above the 50-meter tower. The Top Purge jet is vented directly through one pipe. The Side Purge Jet and Emergency Jet lines are interconnected to the other three pipes.
c	Chemical adsorbents (such as activated alumina and sodium fluoride) are approximately 95 percent effective at concentrations above 1 ppm. Below this concentration, chemical adsorbents have reduced efficiency or no effect. Normal concentrations entering the Purge Cascade Chemical Traps are near or below 1 ppm. The sample traps (which follow the control traps) use activated alumina hydrated to 14 percent moisture content, which is much more effective due to an instantaneous reaction of gaseous UF_6 and ^{99}Tc with the water to form particulate matter.
d	Based on process knowledge, cold traps are estimated to be approximately 90 to 95 percent effective in trapping gaseous UF_6.
e	Scrubber efficiency is estimated to be approximately 75 percent but has not been rigorously measured. Normal emissions from the source are estimated to be negligible compared to monitored sources (<0.001 curies of uranium).

Table 2.2 Grouping of USEC Vents for Modeling

Source	Consists of	Modeled with Source
1	X-326 Top Purge Vent, Side Purge Vent and Emergency Jet Vent	1
2	X-326 SE 6 Vent, SE 5 Vent, SE 4 Vent and ventilation exhaust	1
3	X-330 Building Cell Evacuation/Cold Recovery Vent, SE 3 Vent, SE 2 Vent and ventilation exhaust	7
4	X-333 Cold Recovery Vent, Building Wet Air Evacuation Vent, SE 1 Vent and ventilation exhaust (inactive)	7
5	X-344 Gulper Vent	5
6	All X-700 vents (inactive)	7
7	All X-705 vents	7
8	All X-710 vents	1
9	All X-720 vents (inactive)	7
10	XT-847 Glove Box Vent	1
11	X-343 Cold Trap Vent	7
12	X-344 Cold Trap Vent.	5
13	X-3001 North PV/EV Vent	13

Table 2.3 Releases (in Curies) During CY 2006

NUCLIDE	USEC Sources													
	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
^{234}U	6.04E-06	5.46E-05	2.27E-04	0	4.12E-06	0	1.31E-04	3.86E-05	0	1.85E-05	6.06E-05	1.76E-04	7.58E-07	7.16E-04
^{235}U	1.40E-06	4.19E-06	8.53E-06	0	9.00E-07	0	4.72E-06	3.61E-06	0	5.37E-08	3.73E-06	8.06E-06	2.64E-07	3.52E-05
^{238}U	2.16E-06	5.74E-06	2.76E-05	0	1.90E-06	0	4.07E-05	4.18E-04	0	1.85E-05	4.92E-05	1.73E-04	5.07E-07	7.37E-04
^{99}Tc	1.23E-03	3.34E-03	1.57E-02	0	7.19E-04	0	1.59E-04	4.88E-05	0	3.71E-04	1.11E-03	1.11E-03	2.22E-04	2.38E-02
^{228}Th	0	0	0	0	0	0	3.39E-10	3.74E-08	0	0	0	0	0	3.77E-08
^{230}Th	0	0	0	0	2.81E-06	0	3.40E-10	3.75E-08	0	0	7.47E-07	7.85E-07	0	4.38E-06
^{231}Th	1.40E-06	4.19E-06	8.53E-06	0	9.00E-07	0	4.72E-06	3.61E-06	0	5.37E-08	3.73E-06	8.06E-06	2.64E-07	3.52E-05
^{232}Th	0	0	0	0	6.18E-08	0	2.07E-11	2.29E-09	0	0	0	1.85E-08	0	8.26E-08
^{234}Th	2.16E-06	5.74E-06	2.76E-05	0	1.90E-06	0	4.07E-05	4.18E-04	0	1.85E-05	4.92E-05	1.73E-04	5.07E-07	7.37E-04
^{234m}Pa	2.16E-06	5.74E-06	2.76E-05	0	1.90E-06	0	4.07E-05	.4.18E-04	0	1.85E-05	4.92E-05	1.73E-04	5.07E-07	7.37E-04

Notes:

1. Sources 4, 6 and 9 (X-333, X-700 & X-720) were inactive for radionuclide operations in 2006.

SECTION 3.0 DOSE ASSESSMENT

3.1 Description of Dose Model

The radiation dose calculations were performed using the CAP88 package of computer codes. This package contains USEPA's AIRDOS-EPA computer code. This program implements a steady-state, Gaussian plume, atmospheric dispersion model to calculate environmental concentrations of released radionuclides. It also includes Regulatory Guide 1.109 food chain models to calculate human exposure, both internal and external, to radionuclides deposited in the environment. The human exposure values are then used by USEPA's DARTAB computer code to calculate radiation dose to man from the radionuclides released during the year. The dose calculations use dose conversion factors in the RADRISK data file, which is provided by USEPA with the CAP88 package.

3.2 Summary of Input Parameters

Except for the radionuclide parameters given in Section 2.0 and those provided below, all important input parameter values used are the default values provided with the CAP88 computer codes and data bases.

Solubility Class:	All uranium isotopes:	D
	Technetium-99	D
	All thorium isotopes	W
	All other uranium daughters	W
AMAD:		1 μm

Meteorological data:	2006 data from onsite tower supplemented with offsite data

As already reported to Region V, on October 25 instrument technicians were replacing the in-place sensors with re-calibrated sensors when the hoist mechanism that suspends the instrument platforms on the onsite tower failed. All three platforms fell to earth, destroying the sensors. The tower was repaired and returned to service with new calibrated sensors on December 20. In the interim, data was provided by an Ohio State University meteorological station in Jackson.

Rainfall rate:	100.0 cm/year
Average air temperature:	12.1 °C
Average mixing layer height:	600 meters

Fraction of foodstuffs from:	Local Area	Within 50 mi	Beyond 50 mi*
Vegetables and produce	0.700	0.300	0.000
Meat	0.442	0.558	0.000
Milk	0.399	0.601	0.000

*The dose estimate for foodstuffs is very conservative when 0.0 is used as an input parameter in the category of foodstuffs consumed that were produced at a distance of 50 miles or more from the PORTS site. Realistically, it can be assumed that very little of the foodstuffs consumed by residents within a 50-mile radius of PORTS are produced within 50 miles of the PORTS site. The majority of the foodstuffs consumed are purchased at supermarkets that receive foodstuffs from all over the world.

3.3 Source Characteristics

Table 3.0 Source Characteristics

Source	Type	Release Height (m)	Inner Diameter (m)	Gas Exit Velocity (m/s)	Gas Exit Temperature (°C)	Distance to Nearest Individual (m)	Direction to Nearest Individual
1	Point	50	0.25	18.0	35.0	1370	SE
2	Point	20	0.97	24.0	35.0	1430	E
3	Point	20	0.20	61.0	35.0	1620	E
4	Point	20	0.62	29.0	35.0	1330	ESE
5	Point	20	0.36	0.3	23.8	1830	ESE
6	Point	16	0.30	14.0	23.8	1220	ESE
7	Point	14	1.50	12.3	26.7	1330	ESE
8	Point	9	1.00	10.2	26.7	1260	E
9	Point	18	1.19	9.0	23.8	1220	E
10	Point	11	0.406	5.5	35.0	640	SSW
11	Point	33	0.076	9.3	23.8	1070	ESE
12	Point	15	0.35	0.4	23.8	1870	ESE
13	Point	30	0.10	5.8	26.7	1102	SSW

The source numbers in Table 3.0 correspond to the source numbers in Tables 2.2 and 2.3. As a matter of policy, USEC assumes a neutral buoyancy and zero plume rise for all it's airborne effluents.

3.4 Compliance Assessment

In 1996, USEPA authorized USEC and DOE to submit separate reports for their areas of responsibility. However, each entity was directed to include the other's dose assessment values in its report in order to show the plant's total effect on the public.

The most exposed member of the public received an EDE of 0.0045 mrem/yr (4.5×10^{-5} mSv/yr) from **USEC operations** and an additional 0.012 mrem/yr (1.2×10^{-4} mSv/yr) from **DOE operations** for a total of 0.016 mrem/yr (1.6×10^{-4} mSv/yr) from **total plant operations**. This individual was located 3170 meters north of USEC's predominant emission sources (Source Group 3) and 3200 meters north of DOE's predominant emission source (the X-623 Groundwater Treatment Facility).

The most exposed member of the public due solely to **USEC operations** was the most exposed individual due **total plant operations** described in the previous paragraph. The most exposed member of the public due to **DOE operations** received an EDE of 0.012 mrem/yr (1.2×10^{-4} mSv/yr) from **DOE operations** and an additional 0.0031 mrem/yr (3.1×10^{-5} mSv/yr) from **USEC operations** for a total of 0.015 mrem/yr (1.5×10^{-4} mSv/yr) from **total plant operations**. This individual was located 3200 meters north of DOE's predominant emission source and 3240 meters north-northeast of USEC's predominant emission source.

SECTION 4.0 ADDITIONAL INFORMATION

4.1 Collective EDE (Person-Rem/Yr)

Table 4.0 gives the Collective EDEs (i.e., Population Doses) in person-rem/yr due to USEC operations over the past ten years. The Collective EDEs are given for the 50-mile radius population and the village of Piketon. The individual EDEs for the most exposed individual (MEI) due to USEC operations are also given for comparison.

Table 4.0 Annual Doses Due to PORTS (USEC) Airborne Emissions, 1997-2006 [1]

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	EPA Std
50-mile Collective EDE[2,4]	1.5	6.4	1.0	0.15	0.18	0.095	0.18	0.14	0.013	0.014	NA
Piketon Collective EDE[3,4]	0.06	1.5	0.15	0.029	0.039	0.010	0.018	0.018	0.0021	0.0037	NA
MEI EDE[5] (mrem/yr)	0.12	1.69	0.28	0.039	0.052	0.026	0.033	0.025	0.0029	0.0045	10

Notes to Table 4.0:

1. All dose figures in this table are for USEC operations only.
2. Collective EDE in person-rem/yr for 50-mile radius. This is a summation of the dose to each individual living within a 50-mile radius.
3. Collective EDE in person-rem/yr for the Village of Piketon. This is a summation of the dose to each individual living within the village.
4. Population distributions for calendar year 2001 onward were updated from 2000 census data.
5. The most exposed individual (USEC operations only) in 2006 was located 3170 meters north of the X-705 Decontamination Facility.

4.2 New/Modified Sources

In February 2003, USEC, Inc. submitted a license application to the NRC to build and operate an American Centrifuge Lead Cascade at PORTS. NRC issued the license in March 2004 and UF6 was introduced into the system in October, 2006. The Lead Cascade is installed in the existing X-3001 Process Building and will use the existing building vent.

The Lead Cascade is a demonstration facility licensed for up to 240 individual centrifuges and up to 250 Kg of UF_6. The purpose of the Lead Cascade is to generate operability and economic data for a follow-on commercial centrifuge facility. The Lead Cascade will operate on full recycle with no UF_6 being withdrawn except samples for laboratory analysis. The Lead Cascade has only one process vent, which is equipped with a continuous vent monitor similar to the ones currently used on the X-343 and X-344 vents.

4.3 Unplanned Releases

No major unplanned releases to the atmosphere occurred during calendar year 2006.

Minor releases occurred within workspaces during attaching and detaching of lines to cylinders or when other off-normal conditions developed. These were controlled by the use of HEPA filtered gulpers.

SECTION 5.0 SUPPLEMENTAL INFORMATION

5.1 Radon Emissions

PORTS does not have and does not expect to have any ^{220}Rn emissions due to ^{232}U or ^{232}Th sources. PORTS does not manage any ^{232}U and consequently does not have any emissions of ^{220}Rn due to ^{232}U decay. Although PORTS does not specifically manage ^{232}Th, some amount is present due to ^{236}U decay and feedstock contamination. ^{236}U is itself a trace component of the uranium managed at PORTS, and its thorium daughter is extremely long-lived (half-life greater than 14 billion years). These figures indicate that no measurable concentrations of ^{220}Rn due to ^{232}Th decay will exist onsite within any foreseeable future.

The uranium processed at PORTS has previously been chemically purified at the mill to remove all naturally occurring elements including ^{226}Ra, which is the precursor of ^{222}Rn. It has been calculated that 10,000 years would be required before detectable levels of ^{222}Rn would occur due to the natural decay process.

5.2 Compliance with NESHAP Subpart H Requirements

During 2006, USEC had continuous emissions monitors (samplers) on sixteen point sources of the 38 point/grouped sources that represent what are historically the major emission sources at PORTS. Most of the continuously monitored point sources are not actually subject to the continuous monitoring requirement. USEC believes that all sixteen monitors comply with the requirements of 40 CFR 61.93(b) (i.e., they are equivalent to the EPA reference methods). USEPA-Region 5 conducted a detailed inspection of the vent sampling program during its NESHAP inspections during the weeks of March 15, 1993, and July 22, 1996. Although not explicitly stated in the final inspection reports, USEPA-Region 5 has accepted the stack sampling methodology. Further USEPA inspections of this program were conducted in 1994, 1995, 1998, 2000, and 2006.

The final 1993 NESHAP inspection report did not address the frequency or the methodology for periodic confirmatory measurements. USEPA has accepted engineering estimates, and USEC has made emissions estimates for all unmonitored radionuclide sources using the methods found in 40 CFR 61, Appendices D and E. Stack tests for radionuclides were made on six sources in 1989, and repeat testing was conducted on one source in 1993 as part of the process for renewal of the source's state air permit. The emissions estimates for all of the unmonitored sources were updated in 2000 and updated again in 2005.

A NESHAP Compliance Plan was submitted by DOE in 1990 to document how PORTS planned to demonstrate compliance with the newly promulgated radionuclide NESHAP regulations in 40 CFR 61, Subpart H. The plan was revised and resubmitted in 1991 and 1992. USEC originally included continuous ambient air monitoring in its compliance plan to provide supporting evidence that no significant radionuclide emissions had been overlooked in the source monitoring program. However, USEPA-Region 5 never approved the use of ambient air monitoring to demonstrate USEC's compliance with the radiological NESHAP regulations on a continuing basis. The actions described in the plan were completed. On March 16, 1999, USEPA-Region 5 verbally agreed during a telephone conversation (POEF-520-99-038) that the compliance plan could now be considered a historical document.

PORTS has conducted an extensive stack and vent survey. Stacks with a potential to emit radionuclides have been identified and evaluated. See Attachment 1 for a listing of the radionuclide stacks/vents at PORTS.

5.3 Future Facilities

In August 2004, USEC, Inc. submitted a license application to the NRC for the follow-on commercial plant. The commercial plant will initially be installed in the existing GCEP buildings with some new construction (two new support buildings, an expansion of an existing building and several cylinder storage pads). The NRC issued a Construction and Operating License for this plant on April 13, 2007. USEC is presently finalizing a formal request for EPA Approval to Construct the commercial plant under 40 CFR 61.

Attachment 1
PORTS 2006 Potential and Actual Radiological Emissions Point Sources
(To USEC Air Emissions Annual Report [Under Subpart H, 40 CFR 61.94] Calendar Year 2006).

STACK NUMBER	DESCRIPTION
X-326-A-512	Seal Exhaust Vent Area 4
X-326-A-540	Seal Exhaust Vent Area 6
X-326-A-528	Seal Exhaust Vent Area 5
X-326-B-284	ERP Withdrawal Room Vent
X-326-P-2798	S-Jet Exhaust - Purge Cascade
X-326-P-2799	T-Jet Exhaust - Purge Cascade
X-326-P-616	E-Jet Exhaust - Purge Cascade
X-330-A-079	Tails Withdrawal Room Exhaust
X-330-A-262	Seal Exhaust Vent Area 2
X-330-A-272	X-330 Cold Recovery/Building Wet Air Evacuation Vent
X-330-A-279	Seal Exhaust Vent Area 3
X-330-P-3020	X-330 Building Wet Air Evacuation System (Inactive)
X-333-A-832	Low Assay Withdrawal (LAW) Seal Exhaust Vent
X-333-A-851	Seal Exhaust Vent Area 1
X-333-A-852	X-333 Cold Recovery Vent
X-333-P-856	X-333 Building Wet Air Evacuation Vent
X-333-B-862	LAW Station Room Exhaust
X-342A-A-974	Autoclave Exhaust
X-343-B-1015	Exhaust Fan AJ 108
X-343-P-1011	Autoclave Air Ejector
X-343-P-468	Cold Trap Vent
X-343-P-964	Air Jet
X-343-P-997	Autoclave Housing Relief Vent
X-343-P-998	Autoclave Housing Relief Vent
X-343-P-999	Autoclave Housing Relief Vent
X-344-B-956	Room Air Over Maintenance Shops

STACK NUMBER	DESCRIPTION
X-344-P-929	Gulper Exhaust
X-344-P-469	Cold Trap Vent
X-344A-A-937	Air Ejector
X-700-A-1032	Large Parts Shot Blaster
X-700-A-1037	X-700 Rad Calibration Lab Fume Hood
X-700-A-1043	Converter Repair Station
X-700-A-1053	Small Parts Glass Blaster
X-705-A-1348	Fume Hood
X-705-A-1426	X-705 Gulper System
X-705-A-2813	Small Cylinder Cleaning Unit
X-705-B-1369	Recovery Room Vent
X-705-B-1372	Uranium Solution Storage Vent
X-705-B-1379	Dissolver Storage Columns
X-705-B-1384	Compressor Dismantling Area
X-705-B-2810	Small Cylinder Pit Hood Exhaust
X-705-B-2811	Blue Room
X-705-B-2826	Complexing Hand Table Hood
X-705-B-3091	South Annex Exhaust
X-705-P-1353	X-705 "B" Loop Storage Slabs
X-705-P-1354	X-705 "A" Loop Storage Slabs
X-705-P-1361	T-Water Storage Columns
X-705-P-1364	Bi Uranyl Nitrate Storage Column
X-705-P-1366	Heavy Metals Storage Columns
X-705-P-1375	Caustic Precipitation Handtable Exhaust
X-705-P-1377	Air Jet Recovery
X-705-P-1382	Alumina Filter Tables
X-705-P-1404	Tunnel Vent Fan
X-705-P-1406	Nitric Acid Booth

STACK NUMBER	DESCRIPTION
X-705-P-1422	X-705 Calciner Glove Box
X-705-P-1424	Uranium Sampling & Blending Glove Box
X-705-P-1950	X-705 North Spray Tank
X-705-P-1951	High Assay Parts Cleaning Tables
X-705-P-1952	Group I Hand Table
X-705-P-1953	Small Parts Pit Cleaning Area
X-705-P-1954	Handtable
X-705-P-1960	Ion Exchange Vent
X-710-B-1655	EF 101 Room 111 Lab Hood
X-710-B-1656	EF 122 Room 120 Lab Hood
X-710-B-1657	EF 102 Room 111 Lab Hood
X-710-B-1658	EF 103 Room 111 Lab Hood
X-710-B-1659	EF 123 Room 120 Lab Hood
X-710-B-1661	EF 104 Room 111 Lab Hood
X-710-B-1666	EF 124 Room 120 Lab Hood
X-710-B-1667	EF 106 Room 111 Lab Hood
X-710-B-1668	EF 107 Room 111 Lab Hood
X-710-B-1669	EF 125 Room 120 Lab Hood
X-710-B-1671	EF 108 Room 111 Lab Hood
X-710-B-1673	EF 112 Room 111 Lab Hood
X-710-B-1674	EF 109 Room 111 Lab Hood
X-710-B-1675	EF 126 Room 120 Lab Hood
X-710-B-1676	EF 110 Room 111 Lab Hood
X-710-B-1677	EF 111 Room 111 Lab Vent
X-710-B-1679	EF 127 Room 120 Lab Hood
X-710-B-1681	EF 113 Room 111 Lab Hood
X-710-B-1682	EF 128 Room 120 Lab Hood
X-710-B-1685	EF 114 Room 111 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1686	EF 115 Room 111 Lab Hood
X-710-B-1687	EF 129 Room 120 Lab Hood
X-710-B-1688	EF 116 Room 111 Lab Hood
X-710-B-1692	EF 6 Room 112 Room Vent
X-710-B-1693	EF 117B Room 111 Lab Hood
X-710-B-1694	EF 130 Room 120 Lab Hood
X-710-B-1696	EF 234 Room 240 Lab Hood
X-710-B-1697	EF 117A Room 111 Lab Hood
X-710-B-1698	EF 118 Room 111 Lab Hood
X-710-B-1701	EF 274 Room 240 Lab Hood
X-710-B-1703	EF 167 Room 114 Lab Hood
X-710-B-1706	EF 235 Room 240 Lab Hood
X-710-B-1707	EF 166 Room 114 Lab Hood
X-710-B-1710	EF 275 Room 241 Lab Hood
X-710-B-1711	EF 119 Room 114 Lab Hood
X-710-B-1719	EF 120 Room 115 Lab Hood
X-710-B-1724	EF 238 Room 243 Lab Hood
X-710-B-1732	EF 128 Room 115 Lab Hood
X-710-B-1733	EF 133 Room 128 Lab Hood
X-710-B-1744	EF 223 Room 229 Lab Hood
X-710-B-1747	EF 225 Room 229 Lab Hood
X-710-B-1749	EF 228 Room 229 Lab Hood
X-710-B-1750	EF 229 Room 229 Lab Hood
X-710-B-1751	EF 227 Room 229 Lab Hood
X-710-B-1753	EF 230 Room 229 Lab Hood
X-710-B-1757	EF 239 Room 243 Lab Hood
X-710-B-1758	EF 240 Room 243 Lab Hood
X-710-B-1759	EF 241 Room 243 Lab Hood

STACK NUMBER	DESCRIPTION
X-710-B-1761	EF 270 Room 238 Lab Hood
X-710-B-1779	EF 265 Room 285 Lab Hood
X-710-B-1789	EF 256 Room 263 Lab Hood
X-710-B-1803	EF 162 Room 157 Lab Hood
X-710-B-1805	EF 161 Room 142 Lab Hood
X-710-B-1808	EF 159 Room 156 Lab Hood
X-710-B-1810	EF 158 Room 156 Lab Hood
X-710-B-1811	EF 157 Room 156 Lab Hood
X-710-B-1814	EF 156 Room 156 Lab Hood
X-710-B-1821	EF 143 Room 138 Lab Hood
X-710-B-1822	EF 142 Room 138 Lab Hood
X-710-B-1823	EF 199 Room 138 Lab Hood (AA Unit, has HEPA filter)
X-710-B-1825	EF 141 Room 138 Lab Hood
X-710-B-1830	EF 140 Room 135 Lab Hood
X-710-B-1832	EF 139 Room 135 Lab Hood
X-710-B-1836	EF 138 Room 135 Lab Hood
X-710-B-1838	EF 137 Room 135 Lab Hood
X-710-B-1841	EF 136 Room 135 Lab Hood
X-710-B-1847	EF 134 Room 135 Lab Hood
X-710-B-1849	EF 135 Room 135 Lab Hood
X-720-A-1874	Grit Blasting Room
X-720-A-1545	Motor Shop Steam Cleaning Booth
X-720-A-1904	X-720 Burn Off Oven
X-720-B-1515	Sample Bottle Exhaust
X-3001-A-3111	X-3001 North Purge Vacuum/Evacuation Vacuum Vent
XT-847-B-3102	XT-847 Glove Box

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Attachment 2

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and a complete representation of the emissions under United States Enrichment Corporation's control. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment (see 18 U.S.C. 1001).

Name: R. Wray Jordan
General Manager
Portsmouth Gaseous Diffusion Plant

Signature: 6/8/07 Date:

Name: Daniel Rogers
Director, Lead Cascade Construction and Operation

Signature: Date: 6/7/07

Enclosure 4
GDP 08-0009

Quarterly Radiological Monitoring Discharge
Reports for Plant Outfalls (QRMDR)
CY2003 through CY2007

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/6/03	4.3	21	18	2.49	0.23	1.15	0.97	0.135
1/13/03	< 4.5	16	< 11	1.41	< 0.13	0.45	< 0.33	0.041
1/20/03	4.3	9	< 11	1.23	0.14	0.28	< 0.37	0.040
1/27/03	< 4.9	9	< 12	0.85	< 0.12	0.36	< 0.48	0.035
2/3/03	4.3	< 9	< 9	1.38	0.24	< 0.49	< 0.51	0.078
2/10/03	< 4.9	13	< 14	1.62	< 0.25	0.67	< 0.69	0.082
2/17/03	< 5.0	10	< 14	1.80	< 0.31	0.63	< 0.84	0.110
2/24/03	5.9	18	23	2.31	0.41	1.24	1.55	0.159
3/3/03	< 4.8	16	26	2.51	< 0.28	0.94	1.54	0.149
3/10/03	4.2	15	12	2.19	0.22	0.78	0.63	0.113
3/17/03	< 3.7	9	< 9	1.39	< 0.18	0.42	< 0.44	0.067
3/24/03	< 5.8	11	< 11	1.82	< 0.31	0.56	< 0.58	0.097
3/31/03	< 5.7	< 6	11	1.14	< 0.18	< 0.27	0.50	0.051
Total	< 62.3	< 160	< 180	22.14	< 2.99	< 8.23	< 9.42	1.158
Average	< 4.8	< 12	< 14	1.70	< 0.23	< 0.63	< 0.72	0.089
Maximum	5.9	21	26	2.51	0.41	1.24	1.55	0.159
Minimum	< 3.7	< 6	< 9	0.85	< 0.12	< 0.27	< 0.33	0.035

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001030403	< 0.525	< 0.250	< 0.272	< 0.041

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/6/03	5.5	12	< 12	1.46	0.360	0.81	AA	0.095
1/13/03	< 5.6	12	< 12	1.66	< 0.015	0.18	AA	0.025
1/20/03	2.6	8	< 11	1.58	0.021	0.07	AA	0.013
1/27/03	6.5	11	< 12	1.57	0.042	0.07	AA	0.010
2/3/03	< 5.4	< 11	< 9	1.70	< 0.013	0.14	AA	0.022
2/10/03	< 6.8	11	< 14	1.75	< 0.022	0.23	AA	0.036
2/17/03	< 6.9	12	< 14	1.92	< 0.017	0.18	AA	0.028
2/24/03	6.4	11	< 11	1.76	0.168	0.28	AA	0.046
3/3/03	< 6.5	< 8	12	1.05	< 0.016	< 0.20	0.30	0.026
3/10/03	< 5.8	< 6	< 9	1.60	< 0.020	< 0.13	AA	0.034
3/17/03	< 5.8	< 6	< 9	1.36	< 0.008	< 0.06	AA	0.014
3/24/03	< 8.5	< 6	< 11	1.43	< 0.014	< 0.11	AA	0.024
3/31/03	< 8.6	< 6	< 11	1.75	< 0.010	< 0.06	AA	0.017
Total	< 80.9	< 122	< 147	20.59	< 0.726	< 2.52	0.30	0.390
Average	< 6.2	< 9	< 11	1.58	< 0.056	< 0.19	0.30	0.030
Maximum	< 8.6	12	< 14	1.92	0.360	0.81	0.30	0.095
Minimum	< 2.6	< 6	< 9	1.05	< 0.008	< 0.06	0.30	0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002030403	< 0.669	< 0.194	< 0.049	< 0.132

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations						Loadings					
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi	Beta mCi		Tc mCi	U kg
1/6/03		11.4	20	<	11	9.50		0.135	0.24	<	0.135	0.112
1/13/03	<	5.4	32	<	11	6.08	<	0.052	0.30	<	0.109	0.059
1/20/03		8.9	29	<	11	5.46		0.092	0.30	<	0.116	0.057
1/27/03		12.0	22	<	12	9.38		0.119	0.22	<	0.114	0.093
2/3/03		8.0	17	<	9	4.15		0.057	0.12	<	0.065	0.030
2/10/03		7.5	32	<	9	8.38		0.069	0.29	<	0.083	0.076
2/17/03		6.7	18	<	14	10.9		0.063	0.17	<	0.128	0.102
2/24/03		13.6	11	<	11	10.1		0.151	0.12	<	0.123	0.112
3/3/03		8.4	21		19	7.82		0.079	0.20		0.178	0.074
3/10/03		8.2	19	<	9	8.48		0.071	0.16	<	0.078	0.073
3/17/03		13.2	19		11	8.01		0.091	0.13		0.074	0.055
3/24/03	<	7.0	11	<	11	7.57	<	0.054	0.09	<	0.085	0.059
3/31/03		9.4	11	<	12	6.96		0.066	0.08	<	0.081	0.049
Total	<	119.7	261	<	149	102.8	<	1.099	2.42	<	1.369	0.951
Average	<	9.2	20	<	11	7.91	<	0.085	0.19	<	0.105	0.073
Maximum		13.6	32		19	10.9		0.151	0.30		0.178	0.112
Minimum	<	5.4	11	<	9	4.15	<	0.052	0.08	<	0.065	0.030

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003030403	< 0.322	< 0.408	< 0.356	< 0.048

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings					
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi	Beta mCi	Tc mCi	U kg
1/6/03	<	4.5	29	<	11	1.07	<	0.018	0.80	AA	0.029
1/13/03	<	4.6	22	<	11	1.10	<	0.019	0.62	AA	0.031
1/20/03	<	1.3	22	<	11	1.08	<	0.017	0.59	AA	0.029
1/27/03	<	5.2	29	<	12	1.01	<	0.013	0.60	AA	0.021
2/3/03	<	4.4	26	<	9	1.02	<	0.014	0.60	AA	0.024
2/10/03	<	4.2	19	<	9	0.97	<	0.015	0.47	AA	0.025
2/17/03	<	5.3	13	<	14	0.97	<	0.014	0.31	AA	0.023
2/24/03	<	4.9	20	<	11	0.93	<	0.014	0.49	AA	0.023
3/3/03	<	4.8	17	<	11	1.02	<	0.017	0.48	AA	0.028
3/10/03	<	4.0	18	<	9	1.04	<	0.018	0.53	AA	0.030
3/17/03	<	4.0	17	<	9	0.96	<	0.015	0.45	AA	0.025
3/24/03	<	6.1	11	<	11	0.96	<	0.018	0.37	AA	0.031
3/31/03	<	4.8	18	<	12	1.03	<	0.019	0.56	AA	0.032
Total	<	58.1	261	<	140	13.16	<	0.211	6.86	AA	0.352
Average	<	4.5	20	<	11	1.01	<	0.016	0.53	AA	0.027
Maximum	<	6.1	29	<	14	1.10	<	0.019	0.80	AA	0.032
Minimum	<	1.3	11	<	9	0.93	<	0.013	0.31	AA	0.021

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004030403	< 0.524	< 0.603	< 0.349	< 0.050

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations								Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
1/6/03	<	3.9		8	<	12	0.84	<	0.088		1.36	AA	0.146
1/13/03	<	4.3	<	8	<	11	0.90	<	0.089	<	1.31	AA	0.149
1/20/03	<	1.2	<	8	<	11	0.92	<	0.087	<	1.21	AA	0.146
1/27/03	<	4.7		9	<	12	0.90	<	0.058		0.94	AA	0.096
2/3/03	<	4.0	<	9	<	9	0.85	<	0.056	<	0.97	AA	0.094
2/10/03	<	4.6	<	8	<	14	0.73	<	0.061	<	1.08	AA	0.102
2/17/03	<	4.6	<	8	<	14	0.71	<	0.049	<	0.89	AA	0.082
2/24/03		3.7	<	8	<	11	0.54		0.500	<	1.01	AA	0.073
3/3/03	<	4.2	<	8		12	1.03	<	0.115	<	1.42	2.31	0.192
3/10/03	<	3.4	<	6	<	9	0.61	<	0.080	<	1.22	AA	0.134
3/17/03		1.6	<	5	<	11	0.58		0.184	<	0.60	AA	0.065
3/24/03	<	5.4	<	6	<	11	0.49	<	0.026	<	0.52	AA	0.043
3/31/03	<	5.4	<	6	<	11	0.56	<	0.030	<	0.53	AA	0.050
Total	<	51.0	<	94	<	148	9.66	<	1.423	<	13.07	2.31	1.372
Average	<	3.9	<	7	<	11	0.74	<	0.109	<	1.01	2.31	0.106
Maximum	<	5.4		9	<	14	1.03		0.500	<	1.42	2.31	0.192
Minimum	<	1.2	<	5	<	9	0.49	<	0.026	<	0.52	2.31	0.043

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
005030403	<	0.573	<	0.382	<	0.381	<	0.166

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/6/03	9.1	12	< 12	9.99	0.413	0.56	AA	0.455
1/13/03	8.1	13	< 11	10.3	0.038	0.06	AA	0.049
1/20/03	7.3	10	< 11	9.02	0.045	0.06	AA	0.056
1/27/03	6.1	< 8	< 12	6.93	0.034	< 0.04	AA	0.039
2/3/03	< 4.9	< 10	< 9	6.63	< 0.058	< 0.14	AA	0.097
2/10/03	5.3	< 10	< 9	7.93	0.054	< 0.10	AA	0.082
2/17/03	< 6.2	< 9	< 14	7.72	< 0.078	< 0.15	AA	0.130
2/24/03	6.9	14	< 11	6.71	0.188	0.37	AA	0.182
3/3/03	< 6.5	< 8	< 11	6.17	< 0.073	< 0.16	AA	0.122
3/10/03	6.9	7	< 9	6.11	0.110	0.10	AA	0.098
3/17/03	6.7	< 6	< 9	6.30	0.056	< 0.05	AA	0.053
3/24/03	< 6.5	< 6	< 11	7.24	< 0.085	< 0.12	AA	0.141
3/31/03	< 4.9	< 6	< 12	6.50	< 0.050	< 0.08	AA	0.083
Total	< 85.4	< 117	< 141	97.55	< 1.282	< 2.00	AA	1.587
Average	< 6.6	< 9	< 11	7.50	< 0.099	< 0.15	AA	0.122
Maximum	9.1	14	< 14	10.3	0.413	0.56	AA	0.455
Minimum	< 4.9	< 6	< 9	6.11	< 0.034	< 0.04	AA	0.039

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009030503	< 0.465	< 0.324	< 0.244	< 0.150

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
1/6/03		5.6		8	<	12		3.51		0.064		0.090		AA		0.040
1/13/03		5.8		10	<	11		5.00		0.046		0.079		AA		0.040
1/20/03		5.5	<	8	<	11		2.60		0.040	<	0.059		AA		0.019
1/27/03	<	5.2	<	8	<	12		1.87	<	0.005	<	0.036		AA		0.009
2/3/03		5.3	<	9	<	9		3.26		0.059	<	0.103		AA		0.036
2/10/03	<	4.7	<	10	<	9		5.13	<	0.030	<	0.093		AA		0.050
2/17/03	<	6.1	<	9	<	14		5.09	<	0.044	<	0.130		AA		0.074
2/24/03		4.4	<	8	<	11		2.55		0.082	<	0.144		AA		0.048
3/3/03	<	5.5	<	8	<	11		5.34	<	0.046	<	0.114		AA		0.077
3/10/03	<	4.1	<	6	<	9		4.44	<	0.033	<	0.071		AA		0.055
3/17/03	<	4.3		7	<	9		3.91	<	0.020		0.057		AA		0.033
3/24/03	<	6.1	<	6	<	11		3.53	<	0.024	<	0.067		AA		0.040
3/31/03	<	4.9	<	6	<	12		3.23	<	0.016	<	0.051		AA		0.026
Total	<	67.5	<	102	<	141		49.46	<	0.509	<	1.094		AA		0.547
Average	<	5.2	<	8	<	11		3.80	<	0.039	<	0.084		AA		0.042
Maximum	<	6.1		10	<	14		5.34		0.082		0.144		AA		0.077
Minimum	<	4.1	<	6	<	9		1.87	<	0.005	<	0.036		AA		0.009

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
010030403	<	0.532	<	0.442	<	0.292	<	0.056

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
1/6/03		4.8	<	8	<	12	1.51		0.011	<	0.019	AA	0.004
1/13/03	<	4.8	<	9	<	11	0.97	<	0.001	<	0.009	AA	0.001
1/20/03		2.3	<	8	<	11	1.15		0.002	<	0.008	AA	0.001
1/27/03	<	5.2		12	<	12	0.93	<	0.001		0.012	AA	0.001
2/3/03	<	4.4	<	9	<	9	1.26	<	0.001	<	0.015	AA	0.002
2/10/03	<	4.2	<	9	<	9	1.24	<	0.001	<	0.015	AA	0.002
2/17/03	<	5.2	<	8	<	14	1.07	<	0.002	<	0.028	AA	0.004
2/24/03	<	4.3	<	8	<	11	1.26	<	0.004	<	0.037	AA	0.006
3/3/03	<	4.9		8	<	11	1.36	<	0.002		0.018	AA	0.003
3/10/03	<	4.1	<	6	<	9	1.31	<	0.001	<	0.010	AA	0.002
3/17/03	<	4.0		6	<	9	1.16	<	0.001		0.009	AA	0.002
3/24/03	<	6.1	<	6	<	11	1.26	<	0.002	<	0.019	AA	0.004
3/31/03	<	4.8	<	6	<	12	1.10	<	0.001	<	0.005	AA	0.001
Total	<	59.1	<	102	<	140	15.58	<	0.030	<	0.204	AA	0.032
Average	<	4.5	<	8	<	11	1.20	<	0.002	<	0.016	AA	0.002
Maximum	<	6.1		12	<	14	1.51		0.011	<	0.037	AA	0.006
Minimum	<	2.3	<	6	<	9	0.93	<	0.001	<	0.005	AA	0.001

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
011030403	<	0.418	<	0.408	<	0.333	<	0.130

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 except at Outfall 005. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

AA indicates no detectable concentration.

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
4/7/03	<	4.3	<	6	<	12		1.17	<	0.20	<	0.32	<	0.58		0.059
4/14/03		7.6		16	<	9		2.07		0.37		0.78	<	0.45		0.100
4/21/03		5.2		9		12		1.21		0.26		0.43		0.60		0.060
4/28/03		5.9		8	<	11		1.45		0.25		0.35	<	0.46		0.062
5/5/03	<	3.1	<	7	<	11		1.02	<	0.16	<	0.39	<	0.58		0.054
5/12/03		6.1		11		19		1.78		0.32		0.57		1.01		0.093
5/19/03		4.8		14		13		1.56		0.24		0.67		0.62		0.077
5/26/03	<	3.3		15		14		1.47	<	0.13		0.58		0.53		0.057
6/2/03	<	4.0		11	<	9		1.22	<	0.17		0.48	<	0.38		0.053
6/9/03		4.6		16	<	9		1.64		0.22		0.75	<	0.42		0.078
6/16/03	<	4.4		6	<	11		1.28	<	0.18		0.23	<	0.46		0.053
6/23/03	<	4.3		7	<	9		1.41	<	0.18		0.31	<	0.38		0.059
6/30/03	<	4.1	<	7	<	9		1.11	<	0.13	<	0.26	<	0.32		0.039
Total	<	61.7	<	133	<	147		18.39	<	2.81	<	6.11	<	6.78		0.842
Average	<	4.7	<	10	<	11		1.41	<	0.22	<	0.47	<	0.52		0.065
Maximum		7.6		16		19		2.07		0.37		0.78		1.01		0.100
Minimum	<	3.1	<	6	<	9		1.02	<	0.13		0.23	<	0.32		0.039

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
001060303	<	0.19	<	0.22	<	0.22	<	0.15

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/7/03	< 7.2	< 7	< 12	2.10	< 0.018	< 0.097	AA	0.030
4/14/03	< 4.4	10	< 9	1.23	< 0.016	0.212	AA	0.027
4/21/03	4.6	< 8	< 9	1.36	0.072	< 0.124	AA	0.021
4/28/03	< 4.0	9	< 11	1.08	< 0.005	0.075	AA	0.009
5/5/03	4.5	< 8	< 11	1.38	0.060	< 0.102	AA	0.019
5/12/03	< 5.7	< 7	< 11	1.48	< 0.045	< 0.380	AA	0.076
5/19/03	2.7	7	< 12	0.61	0.077	0.188	AA	0.018
5/26/03	< 3.7	6	< 11	0.71	< 0.009	0.109	AA	0.014
6/2/03	< 4.4	8	< 9	0.84	< 0.004	0.063	AA	0.007
6/9/03	< 4.5	10	< 9	0.93	< 0.013	0.235	AA	0.022
6/16/03	< 5.1	< 6	< 11	1.13	< 0.005	< 0.040	AA	0.008
6/23/03	< 5.1	< 6	< 9	1.29	< 0.009	< 0.069	AA	0.015
6/30/03	< 5.0	< 8	< 9	1.17	< 0.000	< 0.002	AA	0.000
Total	< 60.9	< 97	< 133	15.31	< 0.333	< 1.696	AA	0.266
Average	< 4.7	< 7	< 10	1.18	< 0.026	< 0.130	AA	0.020
Maximum	< 7.2	10	< 12	2.10	0.077	< 0.380	AA	0.076
Minimum	< 2.7	< 6	< 9	0.61	< 0.000	< 0.002	AA	0.000

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002060303	< 0.18	< 0.32	< 0.32	< 0.23

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/7/03	7.1	10	< 12	< 6.14	0.049	0.072	< 0.08	0.042
4/14/03	10.2	18	< 9	6.89	0.081	0.144	< 0.07	0.055
4/21/03	5.1	17	17	6.09	0.032	0.108	0.11	0.038
4/28/03	11.4	9	< 9	5.43	0.066	0.050	< 0.05	0.032
5/5/03	10.8	16	17	9.27	0.079	0.117	0.12	0.068
5/12/03	6.0	13	12	5.36	0.060	0.131	0.12	0.053
5/19/03	12.2	20	< 11	6.09	0.098	0.162	< 0.09	0.049
5/26/03	10.6	15	14	7.15	0.073	0.102	0.10	0.049
6/2/03	< 4.8	22	19	4.35	< 0.035	0.166	0.14	0.032
6/9/03	4.3	12	14	5.66	0.036	0.098	0.11	0.047
6/16/03	< 5.1	11	< 11	5.81	< 0.045	0.101	< 0.10	0.052
6/23/03	< 4.9	7	< 9	4.58	< 0.032	0.046	< 0.06	0.030
6/30/03	7.1	12	< 9	3.89	0.046	0.076	< 0.06	0.025
Total	< 99.6	183	< 161	76.71	< 0.732	1.373	< 1.20	0.572
Average	< 7.7	14	< 12	5.90	< 0.056	0.106	< 0.09	0.044
Maximum	12.2	22	19	9.27	0.098	0.166	0.14	0.068
Minimum	4.3	7	< 9	3.89	< 0.032	0.046	< 0.05	0.025

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003060303	< 0.16	< 0.46	< 0.44	< 0.26

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations				**Loadings**			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/7/03	< 4.8	14	< 12	1.14	< 0.020	0.41	AA	0.033
4/14/03	< 3.4	20	< 9	0.87	< 0.015	0.59	AA	0.026
4/21/03	< 2.6	9	< 9	0.95	< 0.022	0.36	AA	0.037
4/28/03	< 2.7	16	< 9	1.24	< 0.024	0.53	AA	0.041
5/5/03	< 3.7	24	< 11	1.64	< 0.029	0.70	AA	0.049
5/12/03	< 4.6	12	< 11	1.30	< 0.021	0.32	AA	0.034
5/19/03	3.6	19	< 11	1.68	0.104	0.55	AA	0.049
5/26/03	< 3.7	19	< 11	1.25	< 0.024	0.60	AA	0.039
6/2/03	< 4.3	18	< 9	1.23	< 0.020	0.49	AA	0.034
6/9/03	8.1	15	< 9	1.45	0.245	0.46	AA	0.044
6/16/03	< 5.2	24	< 11	1.83	< 0.034	0.72	AA	0.056
6/23/03	< 5.0	25	< 9	1.55	< 0.029	0.79	AA	0.049
6/30/03	< 4.1	12	< 9	0.99	< 0.019	0.37	AA	0.032
Total	< 55.8	227	< 129	17.12	< 0.606	6.90	AA	0.521
Average	< 4.3	17	< 10	1.32	< 0.047	0.53	AA	0.040
Maximum	8.1	25	< 12	1.83	0.245	0.79	AA	0.056
Minimum	< 2.6	9	< 9	0.87	< 0.015	0.32	AA	0.026

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004060303	< 0.054	< 0.59	< 0.49	< 0.28

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
4/7/03	<	4.1	<	6	<	12	0.67	<	0.039	<	0.60	AA	0.066
4/14/03		3.4	<	6	<	9	0.56		0.574	<	1.08	AA	0.095
4/21/03		2.4	<	8	<	9	0.48		0.259	<	0.81	AA	0.051
4/28/03	<	2.8	<	7	<	11	0.48	<	0.017	<	0.43	AA	0.028
5/5/03	<	2.9	<	7	<	11	0.59	<	0.019	<	0.39	AA	0.032
5/12/03	<	4.1	<	7	<	11	0.58	<	0.039	<	0.80	AA	0.065
5/19/03	<	0.9	<	5	<	11	0.63	<	0.027	<	0.34	AA	0.045
5/26/03	<	3.0		7	<	11	0.63	<	0.030		0.55	AA	0.050
6/2/03	<	3.6		7	<	9	0.56	<	0.019		0.39	AA	0.031
6/9/03	<	3.7		8	<	9	0.64	<	0.027		0.55	AA	0.045
6/16/03	<	4.1	<	6	<	11	0.78	<	0.030	<	0.36	AA	0.050
6/23/03	<	4.0	<	6	<	9	0.64	<	0.018	<	0.27	AA	0.030
6/30/03	<	3.7	<	7	<	9	0.65	<	0.005	<	0.10	AA	0.009
Total	<	42.7	<	87	<	132	7.89	<	1.103	<	6.68	AA	0.597
Average	<	3.3	<	7	<	10	0.61	<	0.085	<	0.51	AA	0.046
Maximum	<	4.1		8	<	12	0.78		0.574	<	1.08	AA	0.095
Minimum	<	0.9	<	5	<	9	0.48	<	0.005	<	0.10	AA	0.009

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
005060303	< 0.19	< 0.26	< 0.26	< 0.20

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/7/03	7.0	< 6	< 12	7.02	0.172	< 0.155	AA	0.172
4/14/03	10.7	11	< 9	8.80	0.317	0.326	AA	0.261
4/21/03	5.2	< 8	< 9	6.96	0.151	< 0.227	AA	0.203
4/28/03	6.7	< 8	< 9	6.02	0.088	< 0.102	AA	0.079
5/5/03	3.8	< 7	< 11	5.49	0.046	< 0.090	AA	0.067
5/12/03	4.7	< 7	< 11	4.86	0.085	< 0.130	AA	0.088
5/19/03	6.3	8	< 11	8.01	0.121	0.156	AA	0.152
5/26/03	4.2	8	11	5.45	0.069	0.133	0.19	0.090
6/2/03	4.6	11	< 9	5.39	0.114	0.266	AA	0.135
6/9/03	4.4	9	< 9	8.16	0.162	0.327	AA	0.300
6/16/03	< 4.5	8	< 11	5.62	< 0.036	0.081	AA	0.059
6/23/03	< 4.8	< 6	< 9	7.84	< 0.088	< 0.108	AA	0.147
6/30/03	6.3	8	< 9	5.74	0.034	0.041	AA	0.031
Total	< 73.2	< 104	< 130	85.36	< 1.483	< 2.142	0.19	1.785
Average	< 5.6	< 8	< 10	6.57	< 0.114	< 0.165	0.19	0.137
Maximum	10.7	11	< 12	8.80	< 0.317	0.327	0.19	0.300
Minimum	3.8	< 6	< 9	4.86	< 0.034	< 0.041	0.19	0.031

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009060303	< 0.15	< 0.43	< 0.33	< 0.051

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/7/03	< 4.7	< 6	< 12	3.80	< 0.023	< 0.064	AA	0.039
4/14/03	8.7	9	< 9	4.52	0.085	0.091	AA	0.044
4/21/03	5.4	< 8	< 9	3.90	0.048	< 0.069	AA	0.035
4/28/03	3.5	< 8	< 9	3.17	0.027	< 0.059	AA	0.024
5/5/03	4.5	< 7	< 11	2.42	0.044	< 0.072	AA	0.024
5/12/03	< 4.5	< 7	< 11	3.26	< 0.025	< 0.091	AA	0.041
5/19/03	3.6	8	< 11	3.10	0.044	0.100	AA	0.039
5/26/03	< 3.6	7	12	3.38	< 0.022	0.069	0.13	0.036
6/2/03	4.8	10	< 9	3.34	0.049	0.106	AA	0.034
6/9/03	6.5	20	< 9	3.61	0.089	0.279	AA	0.049
6/16/03	< 4.6	< 6	< 11	3.56	< 0.018	< 0.047	AA	0.029
6/23/03	< 4.3	< 6	< 9	3.34	< 0.019	< 0.054	AA	0.032
6/30/03	< 4.3	< 7	< 9	2.58	< 0.012	< 0.056	AA	0.020
Total	< 63.0	< 110	< 130	43.98	< 0.505	< 1.157	0.13	0.446
Average	< 4.8	< 8	< 10	3.38	< 0.039	< 0.089	0.13	0.034
Maximum	8.7	20	12	4.52	0.089	0.279	0.13	0.049
Minimum	3.5	< 6	< 9	2.42	< 0.012	< 0.047	0.13	0.020

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010060303	< 0.15	< 0.29	< 0.17	< 0.15

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/7/03	< 4.6	< 6	< 12	1.16	< 0.0010	< 0.009	AA	0.0017
4/14/03	< 3.2	9	< 9	1.06	< 0.0010	0.014	AA	0.0017
4/21/03	< 2.3	< 8	< 9	0.70	< 0.0007	< 0.013	AA	0.0012
4/28/03	3.5	< 8	< 9	1.05	0.0038	< 0.008	AA	0.0011
5/5/03	< 3.1	< 7	< 11	1.05	< 0.0014	< 0.016	AA	0.0023
5/12/03	< 4.4	< 7	< 11	1.07	< 0.0015	< 0.016	AA	0.0024
5/19/03	3.9	5	< 11	1.10	0.0099	0.013	AA	0.0028
5/26/03	< 3.5	< 5	< 11	1.04	< 0.0013	< 0.010	AA	0.0021
6/2/03	< 4.1	9	< 9	0.99	< 0.0011	0.017	AA	0.0019
6/9/03	< 4.3	22	< 9	1.11	< 0.0016	0.051	AA	0.0026
6/16/03	< 4.5	< 6	< 11	1.07	< 0.0012	< 0.010	AA	0.0020
6/23/03	< 4.4	6	< 9	1.17	< 0.0016	0.014	AA	0.0026
6/30/03	< 4.2	< 7	< 9	1.14	< 0.0013	< 0.014	AA	0.0022
Total	< 50.0	< 105	< 129	13.71	< 0.0273	< 0.205	AA	0.0266
Average	< 3.8	< 8	< 10	1.05	< 0.0021	< 0.016	AA	0.0020
Maximum	< 4.6	22	< 12	1.17	0.0099	0.051	AA	0.0028
Minimum	< 2.3	< 5	< 9	0.70	< 0.0007	< 0.008	AA	0.0011

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011060303	< 0.051	< 0.28	< 0.39	< 0.22

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these nuclides are transuranics.) Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation. These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

AA indicates no detectable concentration.

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	< 4.0	10	< 9	1.18	< 0.15	0.37	< 0.33	0.043
7/14/03	6.4	13	< 11	1.93	0.32	0.65	< 0.56	0.098
7/21/03	< 3.5	10	< 9	0.94	< 0.12	0.39	< 0.33	0.036
7/28/03	4.5	< 8	< 9	1.16	0.18	< 0.30	< 0.36	0.046
8/4/03	< 3.8	< 7	< 11	1.23	< 0.16	< 0.29	< 0.44	0.051
8/11/03	6.4	9	< 11	2.35	0.32	0.46	< 0.54	0.115
8/18/03	< 3.7	9	< 11	1.14	< 0.12	0.28	< 0.35	0.036
8/25/03	< 4.3	11	< 11	1.11	< 0.15	0.42	< 0.43	0.043
9/1/03	7.6	10	< 11	1.15	0.25	0.34	< 0.37	0.038
9/8/03	< 2.5	15	13	1.52	< 0.08	0.46	0.38	0.046
9/15/03	< 2.6	7	< 9	1.01	< 0.06	0.17	< 0.21	0.024
9/22/03	< 3.5	7	< 11	0.79	< 0.07	0.20	< 0.30	0.021
9/29/03	< 2.4	8	< 11	1.03	< 0.07	0.23	< 0.31	0.029
Total	< 55.2	< 125	< 137	16.54	< 2.03	< 4.55	< 4.91	0.625
Average	< 4.2	< 10	< 11	1.27	< 0.16	< 0.35	< 0.38	0.048
Maximum	7.6	15	13	2.35	0.32	0.65	0.56	0.115
Minimum	< 2.4	< 7	< 9	0.79	< 0.06	< 0.17	< 0.21	0.021

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001080503	< 0.437	< 0.362	< 0.168	< 0.062

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
7/7/03	<	5.1	<	8	<	9	1.50	<	0.005	<	0.04	AA	0.008
7/14/03		3.9		7	<	11	0.61		0.210		0.38	AA	0.033
7/21/03	<	3.9		7	<	9	0.68	<	0.004		0.06	AA	0.006
7/28/03	<	5.2	<	8	<	9	2.30	<	0.020	<	0.11	AA	0.034
8/4/03	<	4.9	<	7	<	11	2.29	<	0.017	<	0.09	AA	0.028
8/11/03		5.8	<	8	<	11	2.26		0.096	<	0.13	AA	0.037
8/18/03		4.7	<	6	<	11	1.63		0.037	<	0.05	AA	0.013
8/25/03	<	5.7	<	7	<	11	1.78	<	0.008	<	0.05	AA	0.014
9/1/03		8.9		14	<	11	1.75		0.082		0.13	AA	0.016
9/8/03		3.8	<	5	<	9	1.09		0.099	<	0.13	AA	0.029
9/15/03		3.5		8	<	9	1.25		0.017		0.04	AA	0.006
9/22/03	<	4.7	<	8	<	12	1.34	<	0.005	<	0.05	AA	0.009
9/29/03	<	3.5		7	<	12	1.43	<	0.009		0.07	AA	0.016
Total	<	63.6	<	98	<	135	19.91	<	0.609	<	1.33	AA	0.248
Average	<	4.9	<	8	<	10	1.53	<	0.047	<	0.10	AA	0.019
Maximum		8.9		14	<	12	2.30		0.210		0.38	AA	0.037
Minimum	<	3.5	<	5	<	9	0.61	<	0.004	<	0.04	AA	0.006

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002080503	< 0.431	< 0.447	< 0.134	< 0.134

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	4.0	< 7	< 11	2.93	0.034	< 0.06	< 0.092	0.025
7/14/03	6.5	17	< 11	4.36	0.075	0.20	< 0.127	0.050
7/21/03	7.4	28	23	5.49	0.065	0.25	0.201	0.048
7/28/03	< 4.8	12	< 9	4.07	< 0.043	0.11	< 0.083	0.037
8/4/03	4.9	15	< 11	4.11	0.044	0.13	< 0.097	0.037
8/11/03	6.7	12	< 11	4.66	0.063	0.12	< 0.102	0.044
8/18/03	< 4.4	12	< 11	6.22	< 0.034	0.09	< 0.087	0.049
8/25/03	< 5.2	11	< 11	2.07	< 0.034	0.07	< 0.071	0.013
9/1/03	12.9	26	12	6.13	0.095	0.19	0.085	0.045
9/8/03	11.8	21	16	7.81	0.096	0.17	0.134	0.064
9/15/03	24.7	18	< 11	15.20	0.145	0.11	< 0.066	0.089
9/22/03	53.1	19	18	41.30	0.321	0.11	0.108	0.250
9/29/03	27.4	14	< 11	14.80	0.156	0.08	< 0.064	0.084
Total	< 173.8	< 212	< 166	119.15	< 1.205	< 1.69	< 1.317	0.835
Average	< 13.4	< 16	< 13	9.17	< 0.093	< 0.13	< 0.101	0.064
Maximum	53.1	28	23	41.30	0.321	0.25	0.201	0.250
Minimum	4.0	< 7	< 9	2.07	< 0.034	< 0.06	< 0.064	0.013

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003080503	< 0.122	< 0.394	< 0.267	< 0.067

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings				
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	<	3.3	15	<	11	1.17	<	0.023	0.50	AA	0.038
7/14/03	<	3.2	13	<	11	1.18	<	0.027	0.50	AA	0.044
7/21/03	<	3.8	18	<	9	1.31	<	0.027	0.61	AA	0.044
7/28/03	<	4.7	17	<	9	1.40	<	0.029	0.60	AA	0.049
8/4/03	<	4.2	18	<	11	1.29	<	0.028	0.63	AA	0.046
8/11/03		5.0	14	<	11	1.36		0.079	0.22	AA	0.022
8/18/03	<	3.9	13	<	11	1.22	<	0.006	0.10	AA	0.010
8/25/03	<	4.9	28	<	11	1.55	<	0.033	0.98	AA	0.055
9/1/03		7.9	22	<	11	1.91		0.238	0.67	AA	0.058
9/8/03		5.6	17	<	9	2.43		0.004	0.01	AA	0.002
9/15/03	<	3.9	19	<	11	2.45	<	0.043	0.54	AA	0.071
9/22/03	<	3.9	15	<	11	1.95	<	0.040	0.52	AA	0.067
9/29/03		3.4	15	<	11	1.79		0.114	0.50	AA	0.060
Total	<	57.7	224	<	138	21.01	<	0.691	6.38	AA	0.566
Average	<	4.4	17	<	11	1.62	<	0.053	0.49	AA	0.044
Maximum		7.9	28	<	11	2.45		0.238	0.98	AA	0.071
Minimum	<	3.2	13	<	9	1.17	<	0.004	0.01	AA	0.002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004080503	< 0.346	< 0.221	< 0.190	< 0.151

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	< 3.7	< 7	< 9	0.68	< 0.012	< 0.22	AA	0.021
7/14/03	< 2.8	< 7	< 11	0.61	< 0.032	< 0.58	AA	0.053
7/21/03	< 3.3	< 7	< 9	0.71	< 0.024	< 0.38	AA	0.039
7/28/03	< 4.0	< 7	< 9	0.62	< 0.018	< 0.37	AA	0.031
8/4/03	< 3.7	< 7	< 11	0.65	< 0.022	< 0.40	AA	0.037
8/11/03	< 4.1	< 7	< 11	0.76	< 0.037	< 0.60	AA	0.061
8/18/03	< 3.4	< 6	< 11	0.70	< 0.025	< 0.33	AA	0.042
8/25/03	< 4.1	7	< 11	0.76	< 0.031	0.48	AA	0.051
9/1/03	< 4.2	12	< 11	0.78	< 0.031	0.79	AA	0.052
9/8/03	< 2.4	6	< 9	0.85	< 0.071	0.81	AA	0.118
9/15/03	< 2.4	8	< 9	0.79	< 0.026	0.45	AA	0.043
9/22/03	< 3.4	< 7	< 11	0.81	< 0.024	< 0.36	AA	0.040
9/29/03	< 2.4	< 5	< 11	0.94	< 0.033	< 0.32	AA	0.055
Total	< 43.9	< 94	< 133	9.66	< 0.386	< 6.10	AA	0.642
Average	< 3.4	< 7	< 10	0.74	< 0.030	< 0.47	AA	0.049
Maximum	< 4.2	12	< 11	0.94	< 0.071	0.81	AA	0.118
Minimum	< 2.4	< 5	< 9	0.61	< 0.012	< 0.22	AA	0.021

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
005080503	< 0.342	< 0.235	< 0.049	< 0.166

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	< 3.1	7	< 11	4.55	< 0.021	0.06	AA	0.035
7/14/03	5.2	8	< 11	3.19	0.097	0.16	AA	0.059
7/21/03	4.0	7	< 9	5.57	0.033	0.06	AA	0.046
7/28/03	< 4.4	< 8	< 9	4.97	< 0.039	< 0.10	AA	0.064
8/4/03	6.0	14	14	4.93	0.105	0.25	0.25	0.087
8/11/03	6.2	10	< 11	6.59	0.082	0.13	AA	0.088
8/18/03	4.3	< 6	< 11	5.66	0.029	< 0.04	AA	0.038
8/25/03	< 4.6	9	< 11	4.98	< 0.027	0.08	AA	0.045
9/1/03	4.8	15	< 11	7.17	0.056	0.17	AA	0.082
9/8/03	6.0	9	< 9	7.59	0.072	0.11	AA	0.092
9/15/03	6.3	8	< 11	7.89	0.031	0.04	AA	0.039
9/22/03	3.8	9	< 11	6.64	0.035	0.09	AA	0.062
9/29/03	6.1	8	< 11	5.67	0.067	0.09	AA	0.062
Total	< 64.8	< 117	< 141	75.40	< 0.694	< 1.36	0.25	0.801
Average	< 5.0	< 9	< 11	5.80	< 0.053	< 0.10	0.25	0.062
Maximum	6.3	15	14	7.89	0.105	0.25	0.25	0.092
Minimum	< 3.1	< 6	< 9	3.19	< 0.021	< 0.04	0.25	0.035

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009080503	< 0.290	< 0.223	< 0.524	< 0.258

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	< 3.2	< 7	< 11	1.75	< 0.009	< 0.056	AA	0.014
7/14/03	3.6	8	< 11	1.48	0.051	0.107	AA	0.021
7/21/03	6.2	< 7	< 9	2.96	0.056	< 0.062	AA	0.027
7/28/03	< 4.4	< 8	< 9	2.26	< 0.013	< 0.071	AA	0.022
8/4/03	< 4.0	< 7	< 11	3.40	< 0.024	< 0.083	AA	0.039
8/11/03	< 4.0	9	< 11	4.21	< 0.025	0.086	AA	0.042
8/18/03	< 3.9	< 6	< 11	2.74	< 0.007	< 0.025	AA	0.012
8/25/03	< 4.5	10	< 11	2.26	< 0.011	0.084	AA	0.018
9/1/03	< 4.6	10	< 11	2.40	< 0.014	0.098	AA	0.024
9/8/03	3.6	6	< 9	4.18	0.035	0.061	AA	0.041
9/15/03	< 3.7	< 7	< 11	2.10	< 0.010	< 0.060	AA	0.017
9/22/03	< 3.7	< 7	< 11	1.67	< 0.009	< 0.067	AA	0.015
9/29/03	5.5	6	< 11	4.09	0.051	0.053	AA	0.038
Total	< 54.9	< 97	< 138	35.50	< 0.315	< 0.913	AA	0.331
Average	< 4.2	< 7	< 11	2.73	< 0.024	< 0.070	AA	0.025
Maximum	6.2	10	< 11	4.21	0.056	0.107	AA	0.042
Minimum	< 3.2	6	< 9	1.48	< 0.007	< 0.025	AA	0.012

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010080503	< 0.351	< 1.05	< 0.512	< 0.646

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/7/03	< 3.1	8	< 11	1.10	< 0.0009	0.012	AA	0.0016
7/14/03	4.3	< 7	< 11	1.23	0.0148	< 0.023	AA	0.0042
7/21/03	< 3.6	8	< 9	1.17	< 0.0014	0.015	AA	0.0023
7/28/03	< 4.3	< 8	< 9	1.05	< 0.0015	< 0.018	AA	0.0025
8/4/03	< 4.1	< 7	< 11	1.00	< 0.0017	< 0.021	AA	0.0029
8/11/03	< 4.1	< 7	13	1.32	< 0.0027	< 0.024	0.042	0.0044
8/18/03	< 3.9	< 6	< 11	1.06	< 0.0018	< 0.016	AA	0.0030
8/25/03	< 4.5	< 7	< 11	1.11	< 0.0017	< 0.017	AA	0.0028
9/1/03	< 4.6	11	< 11	1.14	< 0.0013	0.021	AA	0.0022
9/8/03	< 2.6	7	< 9	1.11	< 0.0015	0.015	AA	0.0024
9/15/03	< 3.7	< 7	< 11	1.14	< 0.0011	< 0.012	AA	0.0019
9/22/03	4.4	< 7	< 11	0.96	0.0077	< 0.013	AA	0.0017
9/29/03	< 2.6	< 5	< 11	0.89	< 0.0010	< 0.010	AA	0.0017
Total	< 49.8	< 95	< 139	14.28	< 0.0391	< 0.217	0.042	0.0336
Average	< 3.8	< 7	< 11	1.10	< 0.0030	< 0.017	0.042	0.0026
Maximum	< 4.6	11	13	1.32	0.0148	< 0.024	0.042	0.0044
Minimum	< 2.6	< 5	< 9	0.89	< 0.0009	< 0.010	0.042	0.0016

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011080503	< 0.365	< 0.360	< 0.227	< 0.227

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since May 2001.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 except at Outfall 005. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

AA indicates no detectable concentration.

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/6/03	< 3.6	< 8	< 8	0.69	< 0.07	< 0.22	< 0.23	0.019
10/13/03	< 4.7	< 8	< 9	0.50	< 0.04	< 0.17	< 0.20	0.011
10/20/03	< 4.7	< 8	< 9	0.94	< 0.08	< 0.19	< 0.22	0.023
10/27/03	< 5.4	< 6	< 9	0.60	< 0.06	< 0.17	< 0.25	0.017
11/3/03	< 5.5	< 6	11	1.51	< 0.13	< 0.15	0.27	0.038
11/10/03	< 4.2	< 7	< 9	0.69	< 0.08	< 0.22	< 0.28	0.022
11/17/03	< 3.5	14	< 11	1.39	< 0.10	0.39	< 0.32	0.040
11/24/03	< 3.5	< 6	< 11	1.40	< 0.09	< 0.16	< 0.28	0.036
12/1/03	< 4.6	14	13	2.17	< 0.16	0.48	0.47	0.077
12/8/03	< 5.4	< 8	10	1.16	< 0.13	< 0.27	0.33	0.038
12/15/03	3.0	8	< 11	1.31	0.10	0.28	< 0.38	0.045
12/22/03	4.7	16	< 11	2.06	0.16	0.55	< 0.39	0.071
12/29/03	6.5	9	< 9	1.51	0.24	0.33	< 0.33	0.056
Total	< 59.3	< 117	< 131	15.93	< 1.43	< 3.58	< 3.94	0.492
Average	< 4.6	< 9	< 10	1.23	< 0.11	< 0.28	< 0.30	0.038
Maximum	6.5	16	13	2.17	0.24	0.55	0.47	0.077
Minimum	3.0	< 6	< 8	0.50	< 0.04	< 0.15	< 0.20	0.011

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001120203	< 0.073	< 0.456	< 0.659	< 0.404

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
10/6/03	<	4.9	<	8	<	9	1.26	<	0.005	<	0.054	AA	0.008
10/13/03	<	6.5	<	8	<	9	0.81	<	0.002	<	0.037	AA	0.004
10/20/03	<	6.7	<	8	<	9	1.37	<	0.008	<	0.078	AA	0.013
10/27/03	<	7.6	<	6	<	9	1.20	<	0.008	<	0.073	AA	0.014
11/3/03	<	7.3	<	6	<	9	1.30	<	0.007	<	0.057	AA	0.012
11/10/03	<	5.9	<	7	<	9	1.22	<	0.006	<	0.061	AA	0.010
11/17/03		7.8		10	<	11	1.19		0.234		0.284	AA	0.036
11/24/03	<	4.0	<	6	<	11	1.00	<	0.014	<	0.154	AA	0.024
12/1/03	<	5.5	<	6	<	9	1.33	<	0.027	<	0.207	AA	0.046
12/8/03	<	6.7	<	8	<	9	0.88	<	0.005	<	0.073	AA	0.008
12/15/03		3.0		8	<	12	1.06		0.043		0.111	AA	0.015
12/22/03		4.8	<	5	<	12	1.33		0.100	<	0.099	AA	0.027
12/29/03		8.0		6	<	9	1.44		0.155		0.110	AA	0.028
Total	<	78.7	<	93	<	125	15.39	<	0.614	<	1.398	AA	0.244
Average	<	6.1	<	7	<	10	1.18	<	0.047	<	0.108	AA	0.019
Maximum		8.0		10	<	12	1.44		0.234		0.284	AA	0.046
Minimum		3.0	<	5	<	9	0.81	<	0.002	<	0.037	AA	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002120203	< 0.083	< 0.481	< 0.699	< 0.087

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/6/03	64.0	18	12	29.3	0.41	0.11	0.08	0.187
10/13/03	40.7	29	28	25.8	0.20	0.14	0.14	0.128
10/20/03	25.9	17	< 9	15.1	0.14	0.09	< 0.05	0.080
10/27/03	< 6.7	12	< 12	6.2	< 0.04	0.07	< 0.07	0.036
11/3/03	126.0	36	30	57.6	0.70	0.20	0.17	0.318
11/10/03	31.1	19	14	12.1	0.17	0.10	0.08	0.066
11/17/03	32.8	27	16	20.7	0.24	0.20	0.12	0.153
11/24/03	20.1	15	< 11	10.4	0.12	0.09	< 0.07	0.062
12/1/03	20.9	12	< 9	9.3	0.13	0.07	< 0.05	0.056
12/8/03	33.9	27	21	18.0	0.20	0.16	0.12	0.106
12/15/03	17.9	25	16	13.0	0.10	0.14	0.09	0.075
12/22/03	10.6	13	< 11	8.6	0.08	0.09	< 0.08	0.062
12/29/03	15.0	24	30	9.7	0.10	0.16	0.20	0.065
Total	< 445.6	273	< 219	235.9	< 2.62	1.63	< 1.30	1.394
Average	< 34.3	21	< 17	18.1	< 0.20	0.13	< 0.10	0.107
Maximum	126.0	36	30	57.6	0.70	0.20	0.20	0.318
Minimum	< 6.7	12	< 9	6.2	< 0.04	0.07	< 0.05	0.036

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003120203	< 0.196	< 0.289	< 0.229	< 0.334

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings				
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi	Beta mCi	Tc mCi	U kg
10/6/03	<	3.9	9	<	8	1.15	<	0.022	0.29	AA	0.037
10/13/03	<	5.1	14	<	9	1.09	<	0.024	0.51	AA	0.040
10/20/03	<	5.0	12	<	9	1.23	<	0.029	0.46	AA	0.048
10/27/03	<	6.1	16	<	12	0.78	<	0.019	0.67	AA	0.033
11/3/03	<	6.0	16	<	9	1.23	<	0.027	0.61	AA	0.046
11/10/03	<	4.6	17	<	9	0.80	<	0.019	0.66	AA	0.031
11/17/03	<	3.8	20	<	11	0.82	<	0.019	0.76	AA	0.031
11/24/03	<	3.9	16	<	11	0.74	<	0.015	0.52	AA	0.025
12/1/03	<	4.9	15	<	9	0.98	<	0.020	0.51	AA	0.034
12/8/03	<	6.0	19	<	9	0.66	<	0.009	0.42	AA	0.015
12/15/03		4.9	18	<	11	0.66		0.185	0.67	AA	0.025
12/22/03	<	1.5	17	<	11	0.67	<	0.015	0.63	AA	0.025
12/29/03	<	2.6	18	<	9	0.63	<	0.013	0.63	AA	0.022
Total	<	58.3	206	<	126	11.44	<	0.416	7.32	AA	0.410
Average	<	4.5	16	<	10	0.88	<	0.032	0.56	AA	0.032
Maximum	<	6.1	20	<	12	1.23		0.185	0.76	AA	0.048
Minimum	<	1.5	9	<	8	0.63	<	0.009	0.29	AA	0.015

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004120203	< 0.287	< 0.761	< 0.405	< 0.118

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
10/6/03	<	3.5	<	8	<	8		0.84	<	0.049	<	0.78		AA		0.081
10/13/03	<	4.4	<	8	<	9		0.81	<	0.049	<	0.78		AA		0.082
10/20/03	<	4.5	<	8	<	9		0.84	<	0.061	<	0.93		AA		0.101
10/27/03	<	5.3	<	6	<	9		0.79	<	0.056	<	0.71		AA		0.093
11/3/03	<	5.3	<	6	<	9		0.73	<	0.058	<	0.80		AA		0.096
11/10/03	<	4.1	<	7	<	9		0.77	<	0.051	<	0.76		AA		0.085
11/17/03	<	3.4		7	<	11		0.97	<	0.075		0.95		AA		0.126
11/24/03	<	3.5	<	6	<	11		0.87	<	0.067	<	0.81		AA		0.112
12/1/03	<	4.5	<	6	<	9		1.07	<	0.071	<	0.64		AA		0.118
12/8/03	<	5.2	<	8	<	12		0.73	<	0.047	<	0.88		AA		0.079
12/15/03		2.7	<	5	<	11		0.67		0.344	<	0.59		AA		0.085
12/22/03		3.0		5	<	11		0.67		0.399		0.62		AA		0.090
12/29/03	<	2.4	<	5	<	9		0.65	<	0.051	<	0.68		AA		0.085
Total	<	51.8	<	85	<	126		10.41	<	1.378	<	9.91		AA		1.231
Average	<	4.0	<	7	<	10		0.80	<	0.106	<	0.76		AA		0.095
Maximum	<	5.3	<	8	<	12		1.07		0.399		0.95		AA		0.126
Minimum	<	2.4	<	5	<	8		0.65	<	0.047	<	0.59		AA		0.079

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
005120203	< 0.118	< 0.64	< 0.702	< 0.249

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/6/03	5.7	< 8	< 8	6.27	0.050	< 0.07	AA	0.056
10/13/03	< 4.8	< 8	< 9	5.79	< 0.017	< 0.04	AA	0.028
10/20/03	< 4.7	< 8	< 9	4.73	< 0.033	< 0.09	AA	0.055
10/27/03	< 5.8	11	< 12	4.87	< 0.038	0.14	AA	0.063
11/3/03	< 5.7	10	< 9	8.24	< 0.034	0.07	AA	0.057
11/10/03	6.8	7	< 9	6.69	0.056	0.06	AA	0.056
11/17/03	6.6	17	< 11	9.14	0.138	0.35	AA	0.191
11/24/03	< 3.8	< 6	< 11	9.17	< 0.051	< 0.09	AA	0.124
12/1/03	< 4.6	< 6	< 9	6.38	< 0.064	< 0.10	AA	0.106
12/8/03	< 6.0	< 8	< 9	8.48	< 0.049	< 0.08	AA	0.081
12/15/03	5.4	8	< 11	7.86	0.082	0.12	AA	0.120
12/22/03	8.6	11	< 11	8.89	0.131	0.17	AA	0.135
12/29/03	6.9	8	< 9	7.46	0.113	0.13	AA	0.123
Total	< 75.4	< 116	< 127	93.97	< 0.856	< 1.51	AA	1.196
Average	< 5.8	< 9	< 10	7.23	< 0.066	< 0.12	AA	0.092
Maximum	8.6	17	< 12	9.17	0.138	0.35	AA	0.191
Minimum	< 3.8	< 6	< 8	4.73	< 0.017	< 0.04	AA	0.028

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009120203	< 0.068	< 0.272	< 0.046	< 0.046

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
10/6/03	<	3.6	<	8	<	8	3.45	<	0.017	<	0.068	AA	0.029
10/13/03	<	4.8	<	8	<	9	1.93	<	0.009	<	0.060	AA	0.015
10/20/03	<	4.6	<	8	<	9	2.39	<	0.012	<	0.063	AA	0.019
10/27/03	<	5.7	<	6	<	12	1.73	<	0.009	<	0.050	AA	0.015
11/3/03	<	5.7	<	6	<	9	4.37	<	0.019	<	0.045	AA	0.032
11/10/03	<	4.4	<	7	<	9	2.63	<	0.012	<	0.052	AA	0.020
11/17/03	<	8.7	<	12	<	10	4.77	<	0.029	<	0.119	AA	0.049
11/24/03		4.8	<	6	<	11	3.73		0.052	<	0.069	AA	0.040
12/1/03	<	4.7	<	6	<	9	4.29	<	0.029	<	0.067	AA	0.049
12/8/03	<	5.8	<	8	<	9	4.38	<	0.022	<	0.070	AA	0.037
12/15/03		3.7	<	5	<	11	4.62		0.037	<	0.047	AA	0.047
12/22/03		7.9		5	<	11	5.51		0.082		0.054	AA	0.057
12/29/03		5.7	<	5	<	9	3.95		0.062	<	0.057	AA	0.043
Total	<	70.1	<	89	<	125	47.75	<	0.391	<	0.821	AA	0.453
Average	<	5.4	<	7	<	10	3.67	<	0.030	<	0.063	AA	0.035
Maximum	<	8.7	<	12	<	12	5.51		0.082	<	0.119	AA	0.057
Minimum	<	3.6	<	5	<	8	1.73	<	0.009	<	0.045	AA	0.015

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010120203	< 0.254	< 0.637	< 0.393	< 0.269

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/6/03	< 3.7	< 8	< 8	1.43	< 0.0013	< 0.012	AA	0.0022
10/13/03	< 4.7	< 8	< 9	0.63	< 0.0006	< 0.012	AA	0.0009
10/20/03	< 4.7	< 8	< 9	0.68	< 0.0007	< 0.014	AA	0.0012
10/27/03	< 5.7	< 6	< 12	0.61	< 0.0008	< 0.012	AA	0.0013
11/3/03	< 5.7	< 6	< 9	0.78	< 0.0006	< 0.008	AA	0.0010
11/10/03	< 4.3	8	< 9	0.60	< 0.0004	0.010	AA	0.0007
11/17/03	< 3.6	< 7	< 11	0.84	< 0.0011	< 0.015	AA	0.0017
11/24/03	< 3.7	< 6	< 11	0.90	< 0.0010	< 0.012	AA	0.0017
12/1/03	< 4.6	< 6	< 9	1.26	< 0.0019	< 0.015	AA	0.0032
12/8/03	< 5.8	< 8	< 9	0.95	< 0.0007	< 0.010	AA	0.0012
12/15/03	2.8	< 5	< 11	1.00	0.0038	< 0.006	AA	0.0013
12/22/03	2.5	6	< 11	1.12	0.0051	0.012	AA	0.0023
12/29/03	< 2.5	< 5	< 9	1.17	< 0.0016	< 0.012	AA	0.0027
Total	< 54.3	< 87	< 126	11.97	< 0.0195	< 0.150	AA	0.0214
Average	< 4.2	< 7	< 10	0.92	< 0.0015	< 0.012	AA	0.0016
Maximum	< 5.8	8	< 12	1.43	0.0051	< 0.015	AA	0.0032
Minimum	< 2.5	< 5	< 8	0.60	< 0.0004	< 0.006	AA	0.0007

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011120203	< 0.081	< 0.291	< 0.367	< 0.107

Plant Radiological Discharges to Surface Water
Calendar Year 2003 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 except at Outfall 005. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

AA indicates no detectable concentration.

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/5/2004	5.7	19	14	1.95	0.30	1.02	0.73	0.103
1/12/2004	< 3.3	17	11	1.52	< 0.11	0.52	0.36	0.048
1/19/2004	< 3.5	9	12	1.17	< 0.13	0.35	0.43	0.044
1/26/2004	5.8	7	< 12	0.86	0.23	0.26	< 0.47	0.035
2/2/2004	< 5.0	6	< 9	0.81	< 0.10	0.20	< 0.33	0.029
2/9/2004	7.4	16	12	2.59	0.38	0.81	0.60	0.132
2/16/2004	< 4.8	9	10	0.92	< 0.11	0.30	0.35	0.031
2/23/2004	< 4.5	6	< 9	1.25	< 0.13	0.19	< 0.30	0.039
3/1/2004	3.0	10	< 9	0.92	0.09	0.32	< 0.27	0.029
3/8/2004	4.3	11	45	2.44	0.19	0.48	2.04	0.110
3/15/2004	< 4.7	9	< 9	0.95	< 0.12	0.34	< 0.33	0.035
3/22/2004	< 4.5	7	< 9	1.25	< 0.12	0.21	< 0.25	0.035
3/29/2004	< 5.7	< 6	< 9	0.81	< 0.09	< 0.19	< 0.31	0.028
Total	< 62.2	< 131	< 170	17.44	< 2.11	< 5.19	< 6.77	0.697
Average	< 4.8	< 10	< 13	1.34	< 0.16	< 0.40	< 0.52	0.054
Maximum	7.4	19	45	2.59	0.38	1.02	2.04	0.132
Minimum	3.0	< 6	< 9	0.81	< 0.09	< 0.19	< 0.25	0.028

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001030204	< 0.064	< 0.450	< 0.084	< 0.227

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations								Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
1/5/2004	<	4.1		8	<	11	1.20	<	0.031		0.351	AA	0.051
1/12/2004	<	3.0		7	<	11	0.93	<	0.009		0.105	AA	0.014
1/19/2004	<	4.5		7	<	9	1.24	<	0.008		0.073	AA	0.013
1/26/2004	<	3.3		8	<	12	1.13	<	0.004		0.043	AA	0.006
2/2/2004	<	6.3	<	6	<	9	1.20	<	0.005	<	0.041	AA	0.009
2/9/2004	<	6.6		7	<	9	1.13	<	0.032		0.317	AA	0.054
2/16/2004	<	7.0	<	8	<	9	4.01	<	0.017	<	0.053	AA	0.028
2/23/2004	<	7.1	<	6	<	10	1.29	<	0.003	<	0.021	AA	0.005
3/1/2004	<	2.2		11	<	9	2.00	<	0.007		0.058	AA	0.011
3/8/2004	<	5.2	<	8	<	9	1.01	<	0.014	<	0.176	AA	0.024
3/15/2004	<	5.0	<	8	<	9	1.06	<	0.006	<	0.067	AA	0.010
3/22/2004	<	6.8	<	6	<	9	1.32	<	0.006	<	0.047	AA	0.011
3/29/2004	<	6.8	<	6	<	9	1.16	<	0.005	<	0.042	AA	0.009
Total	<	67.9	<	93	<	125	18.68	<	0.147	<	1.394	AA	0.244
Average	<	5.2	<	7	<	10	1.44	<	0.011	<	0.107	AA	0.019
Maximum	<	7.1		11	<	12	4.01	<	0.032		0.351	AA	0.054
Minimum	<	2.2	<	6	<	9	0.93	<	0.003	<	0.021	AA	0.005

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
002030404	<	0.071	<	0.108	<	0.107	<	0.107

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations					Loadings				
	Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi		Tc mCi	U kg
1/5/2004	19.7	19		10	15.1	0.16	0.16		0.09	0.124
1/12/2004	15.5	18	<	11	12.8	0.12	0.14	<	0.09	0.097
1/19/2004	9.7	11	<	12	6.1	0.07	0.08	<	0.08	0.043
1/26/2004	9.3	21	<	12	6.5	0.08	0.17	<	0.10	0.054
2/2/2004	7.0	87		131	5.1	0.06	0.79		1.20	0.046
2/9/2004	21.7	85		116	15.9	0.23	0.89		1.22	0.167
2/16/2004	14.7	76		94	0.8	0.14	0.74		0.92	0.008
2/23/2004	27.8	127		175	18.4	0.20	0.90		1.23	0.130
3/1/2004	20.3	87		140	19.4	0.19	0.83		1.34	0.185
3/8/2004	8.2	183		261	5.3	0.07	1.52		2.16	0.044
3/15/2004	9.5	112		186	5.5	0.07	0.81		1.35	0.040
3/22/2004	26.2	107		147	16.2	0.20	0.80		1.10	0.121
3/29/2004	10.7	132		208	6.8	0.08	1.01		1.59	0.052
Total	200.3	1,065	<	1,503	133.9	1.67	8.84	<	12.46	1.111
Average	15.4	82	<	116	10.3	0.13	0.68	<	0.96	0.085
Maximum	27.8	183		261	19.4	0.23	1.52		2.16	0.185
Minimum	7.0	11		10	0.8	0.06	0.08	<	0.08	0.008

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003030204	< 0.170	< 0.387	< 0.073	< 0.226

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations								Loadings					
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi	Beta mCi	Tc mCi	U kg
1/5/2004	<	2.6	18	<	9	0.72	<	0.016	0.65	AA	0.026
1/12/2004	<	3.6	22	<	11	0.72	<	0.017	0.87	AA	0.029
1/19/2004	<	3.8	13	<	9	0.60	<	0.014	0.50	AA	0.024
1/26/2004	<	2.9	20	<	12	0.90	<	0.021	0.79	AA	0.036
2/2/2004	<	6.0	26	<	9	1.30	<	0.031	1.02	AA	0.052
2/9/2004	<	5.0	18	<	9	0.81	<	0.019	0.72	AA	0.032
2/16/2004	<	5.0	17	<	9	1.46	<	0.035	0.66	AA	0.058
2/23/2004		4.0	18	<	9	0.89		0.159	0.73	AA	0.035
3/1/2004		1.8	20	<	9	0.95		0.073	0.80	AA	0.038
3/8/2004	<	3.6	19	<	9	0.93	<	0.022	0.77	AA	0.037
3/15/2004	<	3.6	14	<	9	0.94	<	0.022	0.55	AA	0.038
3/22/2004	<	5.1	13	<	9	1.17	<	0.028	0.50	AA	0.046
3/29/2004	<	6.3	16	<	9	0.87	<	0.017	0.54	AA	0.029
Total	<	53.3	233	<	120	12.26	<	0.474	9.09	AA	0.478
Average	<	4.1	18	<	9	0.94	<	0.036	0.70	AA	0.037
Maximum	<	6.3	26	<	12	1.46		0.159	1.02	AA	0.058
Minimum		1.8	13	<	9	0.60	<	0.014	0.50	AA	0.024

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004030204	< 0.227	< 0.528	< 0.266	< 0.067

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
1/5/2004	<	3.0	<	5	<	11	0.60	<	0.09	<	1.21	AA	0.149
1/12/2004	<	3.1		7	<	11	0.55	<	0.05		0.90	AA	0.076
1/19/2004	<	3.4		7	<	9	0.61	<	0.05		0.84	AA	0.077
1/26/2004	<	2.4	<	5	<	12	0.54	<	0.04	<	0.62	AA	0.065
2/2/2004	<	4.4	<	5	<	9	0.61	<	0.05	<	0.63	AA	0.075
2/9/2004	<	4.2	<	5	<	9	0.31	<	0.03	<	0.78	AA	0.047
2/16/2004	<	4.4	<	7	<	9	0.42	<	0.04	<	1.02	AA	0.061
2/23/2004	<	4.4	<	6	<	9	0.55	<	0.05	<	0.78	AA	0.078
3/1/2004		1.6		6	<	9	0.50		0.20		0.68	AA	0.062
3/8/2004	<	3.3	<	7	<	9	0.46	<	0.04	<	0.91	AA	0.062
3/15/2004		4.9		7	<	9	0.50		0.58		0.79	AA	0.060
3/22/2004	<	4.4	<	6	<	9	0.55	<	0.04	<	0.62	AA	0.063
3/29/2004	<	5.4	<	6	<	9	0.47	<	0.03	<	0.56	AA	0.049
Total	<	48.9	<	76	<	124	6.67	<	1.26	<	10.33	AA	0.923
Average	<	3.8	<	6	<	10	0.51	<	0.10	<	0.79	AA	0.071
Maximum	<	5.4		7	<	12	0.61		0.58	<	1.21	AA	0.149
Minimum		1.6	<	5	<	9	0.31	<	0.03	<	0.56	AA	0.047

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
005030204	<	0.073	<	0.196	<	0.072	<	0.247

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/5/2004	8.6	9	< 9	8.84	0.219	0.22	AA	0.225
1/12/2004	< 3.9	9	< 11	8.12	< 0.027	0.06	AA	0.058
1/19/2004	< 4.0	< 5	< 9	6.20	< 0.043	< 0.06	AA	0.071
1/26/2004	8.3	< 5	< 12	6.70	0.071	< 0.05	AA	0.057
2/2/2004	< 5.2	< 5	< 9	4.53	< 0.028	< 0.06	AA	0.047
2/9/2004	< 7.1	10	< 9	5.32	< 0.081	0.25	AA	0.135
2/16/2004	< 6.1	10	< 9	5.25	< 0.028	0.09	AA	0.047
2/23/2004	5.3	6	< 9	6.46	0.038	0.04	AA	0.047
3/1/2004	9.5	12	< 9	0.87	0.088	0.11	AA	0.008
3/8/2004	7.5	13	< 9	5.82	0.158	0.27	AA	0.123
3/15/2004	4.4	< 7	< 9	7.79	0.030	< 0.05	AA	0.053
3/22/2004	< 5.9	9	< 9	7.71	< 0.050	0.10	AA	0.083
3/29/2004	< 7.0	9	< 9	7.19	< 0.042	0.09	AA	0.070
Total	< 82.8	< 108	< 122	80.80	< 0.903	< 1.43	AA	1.024
Average	< 6.4	< 8	< 9	6.22	< 0.069	< 0.11	AA	0.079
Maximum	9.5	13	< 12	8.84	0.219	0.27	AA	0.225
Minimum	< 3.9	< 5	< 9	0.87	< 0.027	0.04	AA	0.008

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009030204	< 0.246	< 0.352	< 0.299	< 0.183

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/5/2004	< 2.4	< 5	< 9	2.78	< 0.026	< 0.080	AA	0.0430
1/12/2004	< 3.5	< 5	< 11	4.15	< 0.021	< 0.042	AA	0.0351
1/19/2004	< 3.9	< 5	< 9	3.52	< 0.020	< 0.050	AA	0.0335
1/26/2004	4.5	< 5	< 12	< 0.10	0.033	< 0.038	AA	< 0.0007
2/2/2004	< 5.3	< 5	< 9	1.79	< 0.007	< 0.034	AA	0.0113
2/9/2004	< 5.8	< 7	< 9	3.27	< 0.028	< 0.105	AA	0.0472
2/16/2004	< 5.7	8	< 9	5.30	< 0.024	0.061	AA	0.0392
2/23/2004	4.4	6	< 9	2.98	0.029	0.038	AA	0.0197
3/1/2004	2.2	5	< 9	2.39	0.016	0.036	AA	0.0170
3/8/2004	6.5	< 7	< 9	3.42	0.088	< 0.097	AA	0.0466
3/15/2004	< 5.3	< 5	< 9	3.01	< 0.012	< 0.034	AA	0.0194
3/22/2004	< 5.3	< 5	< 9	2.70	< 0.013	< 0.044	AA	0.0223
3/29/2004	< 6.4	7	< 9	2.68	< 0.013	0.058	AA	0.0217
Total	< 61.2	< 77	< 121	< 38.09	< 0.330	< 0.717	AA	< 0.3567
Average	< 4.7	< 6	< 9	< 2.93	< 0.025	< 0.055	AA	< 0.0274
Maximum	6.5	8	< 12	5.30	0.088	< 0.105	AA	0.0472
Minimum	2.2	< 5	< 9	< 0.10	< 0.007	< 0.034	AA	< 0.0007

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010030204	< 0.226	< 0.571	< 0.202	< 0.330

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/5/2004	< 2.4	< 5	< 9	0.99	< 0.0018	< 0.016	AA	0.0030
1/12/2004	< 3.4	7	< 11	1.08	< 0.0007	0.007	AA	0.0011
1/19/2004	< 3.8	7	< 9	0.73	< 0.0004	0.007	AA	0.0007
1/26/2004	< 2.7	8	< 12	6.54	< 0.0019	0.005	AA	0.0047
2/2/2004	< 4.9	< 5	< 9	0.89	< 0.0006	< 0.006	AA	0.0009
2/9/2004	< 5.3	< 7	< 9	1.09	< 0.0015	< 0.017	AA	0.0026
2/16/2004	< 5.5	8	< 9	1.33	< 0.0006	0.005	AA	0.0009
2/23/2004	3.0	10	< 9	1.28	0.0013	0.004	AA	0.0006
3/1/2004	2.2	13	< 9	1.22	0.0013	0.007	AA	0.0007
3/8/2004	< 3.9	< 7	< 9	1.46	< 0.0016	< 0.013	AA	0.0027
3/15/2004	< 3.7	< 7	< 9	1.30	< 0.0003	< 0.003	AA	0.0005
3/22/2004	< 5.5	11	< 9	1.55	< 0.0004	0.005	AA	0.0007
3/29/2004	< 6.5	8	< 9	1.07	< 0.0006	0.007	AA	0.0010
Total	< 52.8	< 101	< 121	20.53	< 0.0131	< 0.102	AA	0.0201
Average	< 4.1	< 8	< 9	1.58	< 0.0010	< 0.008	AA	0.0015
Maximum	< 6.5	13	< 12	6.54	< 0.0019	< 0.017	AA	0.0047
Minimum	2.2	< 5	< 9	0.73	< 0.0003	< 0.003	AA	0.0005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011030304	< 0.207	< 0.121	< 0.120	< 0.120

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 except at Outfall 005. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

AA indicates no detectable concentration.

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
4/5/2004		5.7		13		13		2.58		0.176		0.41		0.39		0.079
4/12/2004	<	4.4		8	<	9		0.94	<	0.097		0.24	<	0.27		0.028
4/19/2004	<	6.1		14		12		1.69	<	0.171		0.41		0.36		0.050
4/26/2004	<	6.0		10	<	9		1.61	<	0.226		0.39	<	0.38		0.066
5/3/2004		4.6		7	<	9		0.78		0.171		0.24	<	0.35		0.029
5/10/2004	<	5.1		5	<	9		0.80	<	0.082		0.15	<	0.27		0.024
5/17/2004	<	3.7	<	5	<	9		0.67	<	0.078	<	0.16	<	0.31		0.023
5/24/2004	<	4.9	<	6	<	9		1.08	<	0.159	<	0.27	<	0.40		0.047
5/31/2004	<	3.7	<	7		13		1.42	<	0.125	<	0.22		0.43		0.048
6/7/2004	<	3.6	<	7	<	8		0.84	<	0.044	<	0.10	<	0.13		0.013
6/14/2004		3.9	<	6	<	9		0.65		0.138	<	0.23	<	0.31		0.023
6/21/2004	<	4.4	<	5	<	9		0.78	<	0.088	<	0.17	<	0.29		0.026
6/28/2004	<	3.9	<	6	<	9		0.45	<	0.033	<	0.12	<	0.18		0.010
Total	<	60.0	<	98	<	127		14.29	<	1.588	<	3.11	<	4.07		0.465
Average	<	4.6	<	8	<	10		1.10	<	0.122	<	0.24	<	0.31		0.036
Maximum	<	6.1		14		13		2.58	<	0.226		0.41		0.43		0.079
Minimum	<	3.6	<	5	<	8		0.45	<	0.033	<	0.10	<	0.13		0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001060204	< 0.065	< 0.468	< 0.157	< 0.229

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
4/5/2004	<	6.7	<	5	<	9		1.48	<	0.0240	<	0.142		AA		0.039
4/12/2004	<	6.3		7	<	9		1.55	<	0.0110		0.075		AA		0.018
4/19/2004	<	8.1	<	6	<	9		1.24	<	0.0170	<	0.140		AA		0.029
4/26/2004	<	7.9		7	<	9		1.37	<	0.0100		0.085		AA		0.016
5/3/2004	<	5.2	<	6	<	9		1.16	<	0.0050	<	0.049		AA		0.009
5/10/2004	<	6.3		6	<	9		1.23	<	0.0040		0.035		AA		0.007
5/17/2004	<	4.9		6	<	9		1.44	<	0.0070		0.048		AA		0.012
5/24/2004	<	6.5	<	6	<	9		1.03	<	0.0110	<	0.115		AA		0.019
5/31/2004	<	4.2		12	<	9		0.82	<	0.0160		0.367		AA		0.026
6/7/2004		5.0		7	<	9		0.63		0.0410		0.060		AA		0.005
6/14/2004	<	3.4		11	<	9		0.69	<	0.0040		0.115		AA		0.007
6/21/2004	<	6.1		7	<	9		0.73	<	0.0030		0.048		AA		0.005
6/28/2004	<	5.4	<	6	<	9		0.83	<	0.0020	<	0.027		AA		0.004
Total	<	76.0	<	92	<	117		14.20	<	0.1550	<	1.306		AA		0.196
Average	<	5.8	<	7	<	9		1.09	<	0.0119	<	0.100		AA		0.015
Maximum	<	8.1		12	<	9		1.55		0.0410		0.367		AA		0.039
Minimum	<	3.4	<	5	<	9		0.63	<	0.0020	<	0.027		AA		0.004

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
002060204	<	0.068	<	0.056	<	0.083	<	0.056

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/5/2004	12.4	107	166	8.88	0.114	0.987	1.53	0.082
4/12/2004	11.5	103	162	8.43	0.084	0.752	1.18	0.062
4/19/2004	< 7.4	123	195	6.98	< 0.057	0.936	1.49	0.053
4/26/2004	< 6.1	90	146	5.25	< 0.049	0.723	1.18	0.042
5/3/2004	13.8	133	198	9.85	0.089	0.863	1.28	0.064
5/10/2004	13.6	152	243	10.8	0.083	0.925	1.48	0.066
5/17/2004	7.5	99	149	4.25	0.052	0.678	1.02	0.029
5/24/2004	6.9	103	163	8.55	0.065	0.970	1.54	0.081
5/31/2004	7.1	100	156	6.62	0.071	0.998	1.56	0.066
6/7/2004	7.5	111	180	6.20	0.049	0.721	1.17	0.040
6/14/2004	10.1	92	137	9.49	0.074	0.669	1.00	0.069
6/21/2004	6.0	88	116	5.45	0.047	0.680	0.90	0.042
6/28/2004	7.8	45	61	4.62	0.050	0.289	0.39	0.030
Total	< 117.7	1,345	2,072	95.37	< 0.884	10.19	15.71	0.726
Average	< 9.1	103	159	7.34	< 0.068	0.784	1.21	0.056
Maximum	13.8	152	243	10.8	0.114	0.998	1.56	0.082
Minimum	6.0	45	61	4.25	0.047	0.289	0.39	0.029

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003060804	< 0.058	< 0.166	< 0.061	< 0.090

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
4/5/2004	<	6.1		17	<	9		0.85	<	0.018		0.58		AA		0.0297
4/12/2004	<	4.7		20	<	9		0.74	<	0.017		0.73		AA		0.0276
4/19/2004	<	6.6		16	<	9		0.89	<	0.020		0.62		AA		0.0336
4/26/2004	<	5.5		16	<	9		0.83	<	0.019		0.63		AA		0.0323
5/3/2004	<	4.4		17	<	9		0.72	<	0.009		0.37		AA		0.0151
5/10/2004	<	5.5		18	<	9		0.86	<	0.008		0.29		AA		0.0141
5/17/2004		5.8		25	<	9		0.82		0.131		0.56		AA		0.0188
5/24/2004	<	5.8		20	<	9		1.29	<	0.017		0.45		AA		0.0284
5/31/2004	<	3.3	<	7	<	8		0.32	<	0.003	<	0.10		AA		0.0051
6/7/2004	<	4.1		18	<	8		1.32	<	0.008		0.19		AA		0.0135
6/14/2004	<	3.1		15	<	9		1.21	<	0.013		0.25		AA		0.0210
6/21/2004	<	5.1		20	<	9		1.19	<	0.015		0.41		AA		0.0244
6/28/2004	<	4.4		14	<	9		1.14	<	0.013		0.26		AA		0.0212
Total	<	64.4	<	221	<	116		12.18	<	0.291	<	5.42		AA		0.2848
Average	<	5.0	<	17	<	9		0.94	<	0.022	<	0.42		AA		0.0219
Maximum	<	6.6		25	<	9		1.32		0.131		0.73		AA		0.0336
Minimum	<	3.1	<	7	<	8		0.32	<	0.003	<	0.10		AA		0.0051

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
004060804	<	0.178	<	0.281	<	0.063	<	0.172

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
4/5/2004	<	4.2	<	5	<	9	0.56	<	0.0620	<	0.92	AA	0.103
4/12/2004	<	4.3		10	<	9	0.48	<	0.0330		1.14	AA	0.055
4/19/2004	<	5.7	<	6	<	9	0.40	<	0.0330	<	0.78	AA	0.054
4/26/2004	<	5.8	<	6	<	9	0.44	<	0.0290	<	0.63	AA	0.048
5/3/2004	<	3.9		8	<	9	0.39	<	0.0260		0.83	AA	0.043
5/10/2004	<	4.9		8	<	9	0.39	<	0.0250		0.90	AA	0.042
5/17/2004	<	3.5	<	5	<	9	0.36	<	0.0140	<	0.31	AA	0.024
5/24/2004	<	4.7	<	6	<	9	0.33	<	0.0150	<	0.48	AA	0.025
5/31/2004	<	3.5	<	7	<	8	0.36	<	0.0210	<	0.63	AA	0.035
6/7/2004	<	3.5	<	7	<	8	0.34	<	0.0190	<	0.61	AA	0.032
6/14/2004	<	2.7	<	6	<	9	0.33	<	0.0140	<	0.45	AA	0.023
6/21/2004	<	4.3	<	5	<	9	0.32	<	0.0200	<	0.54	AA	0.033
6/28/2004	<	3.8		7	<	9	0.33	<	0.0090		0.33	AA	0.016
Total	<	54.8	<	85	<	116	5.03	<	0.3200	<	8.53	AA	0.531
Average	<	4.2	<	7	<	9	0.39	<	0.0246	<	0.66	AA	0.041
Maximum	<	5.8		10	<	9	0.56	<	0.0620		1.14	AA	0.103
Minimum	<	2.7	<	5	<	8	0.32	<	0.0090	<	0.31	AA	0.016

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
005060204	<	0.063	<	0.055	<	0.055	<	0.055

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/5/2004	< 7.0	10	< 9	8.12	< 0.135	0.279	AA	0.224
4/12/2004	< 4.8	11	< 9	8.73	< 0.072	0.158	AA	0.130
4/19/2004	< 6.4	6	< 9	6.80	< 0.049	0.073	AA	0.082
4/26/2004	7.2	8	< 9	7.25	0.128	0.136	AA	0.130
5/3/2004	5.4	< 6	< 9	6.77	0.056	< 0.063	AA	0.070
5/10/2004	< 5.4	10	< 9	7.41	< 0.025	0.058	AA	0.042
5/17/2004	< 4.1	9	< 9	5.31	< 0.031	0.090	AA	0.052
5/24/2004	< 5.6	10	< 9	5.95	< 0.048	0.131	AA	0.080
5/31/2004	5.6	< 7	< 9	5.93	0.135	< 0.162	AA	0.144
6/7/2004	4.7	7	< 8	6.48	0.039	0.061	AA	0.053
6/14/2004	3.8	8	< 9	6.46	0.030	0.065	AA	0.052
6/21/2004	< 4.6	< 5	< 9	5.10	< 0.050	< 0.085	AA	0.083
6/28/2004	4.5	< 6	< 9	5.46	0.065	< 0.084	AA	0.079
Total	< 69.1	< 103	< 117	85.77	< 0.863	< 1.445	AA	1.221
Average	< 5.3	< 8	< 9	6.60	< 0.066	< 0.111	AA	0.094
Maximum	7.2	11	< 9	8.73	< 0.135	0.279	AA	0.224
Minimum	< 3.8	< 5	< 8	5.10	< 0.025	< 0.058	AA	0.042

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009060804	< 0.303	< 0.155	< 0.057	0.105

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/5/2004	< 6.4	11	< 9	4.66	< 0.0330	0.129	AA	0.056
4/12/2004	< 4.7	10	< 9	3.54	< 0.0180	0.090	AA	0.031
4/19/2004	< 6.4	< 6	< 9	4.21	< 0.0270	< 0.063	AA	0.046
4/26/2004	6.4	8	< 9	3.56	0.0790	0.099	AA	0.044
5/3/2004	< 4.4	< 6	< 9	3.35	< 0.0160	< 0.048	AA	0.027
5/10/2004	< 5.4	10	< 9	4.28	< 0.0160	0.061	AA	0.026
5/17/2004	< 4.0	6	< 9	2.19	< 0.0100	0.044	AA	0.017
5/24/2004	< 5.4	8	< 9	2.88	< 0.0160	0.073	AA	0.027
5/31/2004	4.9	8	< 8	3.88	0.0830	0.143	AA	0.066
6/7/2004	< 3.9	7	< 8	3.30	< 0.0150	0.052	AA	0.025
6/14/2004	9.1	9	< 9	2.78	0.0700	0.070	AA	0.022
6/21/2004	< 4.6	6	< 9	2.81	< 0.0150	0.050	AA	0.025
6/28/2004	< 4.3	< 6	< 9	2.47	< 0.0090	< 0.036	AA	0.015
Total	< 69.9	< 101	< 116	43.91	< 0.4070	< 0.958	AA	0.425
Average	< 5.4	< 8	< 9	3.38	< 0.0313	< 0.074	AA	0.033
Maximum	9.1	11	< 9	4.66	0.0830	0.143	AA	0.066
Minimum	< 3.9	< 6	< 8	2.19	< 0.0090	< 0.036	AA	0.015

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010060804	< 0.067	< 0.056	< 0.055	< 0.151

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
4/5/2004	<	6.3		14	<	9	1.42	<	0.00110		0.0170	AA	0.0018
4/12/2004	<	4.9		19	<	9	1.27	<	0.00087		0.0210	AA	0.0014
4/19/2004	<	6.8		7	<	9	1.37	<	0.00083		0.0070	AA	0.0014
4/26/2004	<	5.5		8	<	9	1.28	<	0.00083		0.0080	AA	0.0014
5/3/2004	<	4.3	<	6	<	9	1.00	<	0.00050	<	0.0050	AA	0.0008
5/10/2004	<	5.5		10	<	9	1.08	<	0.00035		0.0050	AA	0.0006
5/17/2004	<	4.2		8	<	9	0.89	<	0.00025		0.0040	AA	0.0004
5/24/2004	<	5.3	<	6	<	9	1.01	<	0.00069	<	0.0070	AA	0.0011
5/31/2004	<	3.9		8	<	8	1.25	<	0.00180		0.0200	AA	0.0030
6/7/2004	<	4.0		13	<	8	1.16	<	0.00068		0.0130	AA	0.0011
6/14/2004	<	3.1		9	<	9	0.94	<	0.00055		0.0090	AA	0.0009
6/21/2004	<	4.9		8	<	9	1.28	<	0.00048		0.0050	AA	0.0008
6/28/2004	<	4.3	<	6	<	9	1.19	<	0.00012	<	0.0010	AA	0.0002
Total	<	63.0	<	121	<	116	15.14	<	0.00905	<	0.1220	AA	0.0149
Average	<	4.8	<	9	<	9	1.16	<	0.00070	<	0.0094	AA	0.0011
Maximum	<	6.8		19	<	9	1.42	<	0.00180		0.0210	AA	0.0030
Minimum	<	3.1	<	6	<	8	0.89	<	0.00012	<	0.0010	AA	0.0002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011060804	< 0.183	< 0.193	< 0.223	< 0.152

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001, which is grab sampled weekly.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

Pu-239/240 was detected at Outfall 009 at a concentration of 0.105 pCi/L versus a reported MDA of 0.057 pCi/L. The reported MDAs for Pu-239/240 at other ranged from 0.055 pCi/L to 0.229 pCi/L. The two adjacent outfalls (010 and 011) both had reported MDAs of 0.151 pCi/L for Pu-239/240. Based on these concentrations, the reported concentration at Outfall 009 is believed to be a false positive. USEC will continue to monitor this outfall for a recurrance.

AA indicates no detectable concentration.

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Calendar Year 2004 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/5/2004	< 4.8	< 6	< 9	0.41	< 0.030	< 0.12	< 0.19	0.009
7/12/2004	< 4.8	7	< 9	0.62	< 0.080	0.24	< 0.33	0.024
7/19/2004	< 5.4	< 6	< 9	0.51	< 0.062	< 0.20	< 0.32	0.018
7/26/2004	< 5.2	< 6	< 9	0.44	< 0.084	< 0.32	< 0.50	0.025
8/2/2004	< 5.6	< 6	< 9	0.68	< 0.061	< 0.16	< 0.23	0.018
8/9/2004	16.7	8	< 9	0.61	0.423	0.21	< 0.22	0.015
8/16/2004	< 3.7	7	< 9	0.58	< 0.027	0.09	< 0.12	0.008
8/23/2004	< 3.6	< 6	< 9	0.42	< 0.038	< 0.15	< 0.23	0.011
8/30/2004	< 4.7	< 6	< 10	0.55	< 0.033	< 0.10	< 0.17	0.010
9/6/2004	< 4.9	< 6	< 10	0.56	< 0.025	< 0.08	< 0.13	0.007
9/13/2004	< 4.0	< 6	< 9	0.73	< 0.064	< 0.15	< 0.23	0.019
9/20/2004	5.9	10	< 9	0.47	0.153	0.27	< 0.24	0.012
9/27/2004	< 4.3	9	< 9	0.42	< 0.024	0.15	< 0.16	0.007
Total	< 73.6	< 87	< 117	7.00	< 1.104	< 2.24	< 3.05	0.182
Average	< 5.7	< 7	< 9	0.54	< 0.085	< 0.17	< 0.23	0.014
Maximum	16.7	10	< 10	0.73	0.423	< 0.32	< 0.50	0.025
Minimum	< 3.6	< 6	< 9	0.41	< 0.024	< 0.08	< 0.12	0.007

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001080304	< 0.057	< 0.216	< 0.054	< 0.054

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/5/2004	< 6.5	< 6	< 9	0.63	< 0.005	< 0.08	AA	0.009
7/12/2004	< 6.6	9	< 9	0.76	< 0.004	0.08	AA	0.006
7/19/2004	< 7.6	< 6	< 9	1.00	< 0.003	< 0.03	AA	0.006
7/26/2004	< 7.6	< 6	< 9	1.02	< 0.008	< 0.08	AA	0.013
8/2/2004	< 7.6	< 6	< 9	0.99	< 0.008	< 0.08	AA	0.013
8/9/2004	< 5.3	< 6	< 9	0.85	< 0.006	< 0.07	AA	0.010
8/16/2004	< 5.0	8	< 9	0.90	< 0.004	0.05	AA	0.006
8/23/2004	< 5.1	< 6	< 9	0.90	< 0.005	< 0.05	AA	0.008
8/30/2004	< 6.6	< 6	< 10	0.82	< 0.004	< 0.06	AA	0.007
9/6/2004	< 6.6	< 6	< 10	0.91	< 0.003	< 0.04	AA	0.005
9/13/2004	< 5.3	< 6	< 9	0.78	< 0.008	< 0.10	AA	0.013
9/20/2004	6.7	20	< 9	0.89	0.141	0.42	AA	0.019
9/27/2004	< 4.9	< 7	< 10	0.41	< 0.002	< 0.05	AA	0.003
Total	< 81.4	< 97	< 118	10.86	< 0.201	< 1.17	AA	0.118
Average	< 6.3	< 7	< 9	0.84	< 0.015	< 0.09	AA	0.009
Maximum	< 7.6	20	< 10	1.02	0.141	0.42	AA	0.019
Minimum	< 4.9	< 6	< 9	0.41	< 0.002	< 0.03	AA	0.003

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002080304	< 0.058	< 0.229	< 0.156	< 0.156

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/5/2004	11.1	106	159	5.93	0.083	0.79	1.19	0.044
7/12/2004	< 5.4	42	77	3.87	< 0.040	0.31	0.57	0.029
7/19/2004	< 6.2	74	113	3.50	< 0.047	0.56	0.87	0.027
7/26/2004	< 6.5	37	56	3.15	< 0.052	0.30	0.45	0.025
8/2/2004	< 6.7	84	116	4.95	< 0.052	0.65	0.90	0.038
8/9/2004	7.7	87	155	5.20	0.051	0.58	1.03	0.035
8/16/2004	5.8	137	225	3.57	0.049	1.15	1.88	0.030
8/23/2004	4.7	156	276	4.63	0.038	1.27	2.25	0.038
8/30/2004	< 5.6	144	227	3.10	< 0.056	1.46	2.31	0.032
9/6/2004	< 4.6	146	225	4.28	< 0.034	1.09	1.67	0.032
9/13/2004	8.6	163	261	8.18	0.078	1.49	2.38	0.075
9/20/2004	7.1	133	213	6.43	0.064	1.20	1.92	0.058
9/27/2004	< 5.1	146	208	4.91	< 0.034	0.97	1.38	0.033
Total	< 85.1	1455	2311	61.70	< 0.678	11.81	18.79	0.494
Average	< 6.5	112	178	4.75	< 0.052	0.91	1.45	0.038
Maximum	11.1	163	276	8.18	0.083	1.49	2.38	0.075
Minimum	< 4.6	37	56	3.10	< 0.034	0.30	0.45	0.025

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003080304	< 0.058	< 0.265	< 0.180	< 0.180

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/5/2004	< 5.3	17	< 9	1.06	< 0.012	0.31	AA	0.019
7/12/2004	< 5.0	11	< 9	0.96	< 0.011	0.21	AA	0.019
7/19/2004	< 5.9	11	< 9	1.50	< 0.016	0.20	AA	0.027
7/26/2004	< 5.9	7	< 9	1.24	< 0.013	0.13	AA	0.022
8/2/2004	< 6.4	15	< 9	< 0.10	< 0.001	0.31	AA	< 0.002
8/9/2004	< 4.4	13	< 9	1.24	< 0.014	0.25	AA	0.023
8/16/2004	< 4.2	14	< 9	1.37	< 0.013	0.21	AA	0.021
8/23/2004	< 3.9	11	< 9	1.40	< 0.015	0.19	AA	0.025
8/30/2004	< 5.1	11	< 10	2.56	< 0.029	0.20	AA	0.049
9/6/2004	< 4.4	11	< 9	1.69	< 0.018	0.19	AA	0.030
9/13/2004	5.1	16	< 9	2.08	0.094	0.29	AA	0.038
9/20/2004	< 4.6	8	< 10	1.12	< 0.014	0.17	AA	0.023
9/27/2004	< 4.7	17	< 10	1.43	< 0.014	0.28	AA	0.024
Total	< 64.9	161	< 117	< 17.75	< 0.264	2.95	AA	< 0.323
Average	< 5.0	12	< 9	< 1.37	< 0.020	0.23	AA	< 0.025
Maximum	< 6.4	17	< 10	2.56	0.094	0.31	AA	0.049
Minimum	< 3.9	7	< 9	< 0.10	< 0.001	0.13	AA	< 0.002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004080304	< 0.064	< 0.317	< 0.241	< 0.208

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Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations								Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
7/5/2004	<	4.6	<	6	<	9	0.31	<	0.008	<	0.24	AA	0.013
7/12/2004	<	4.8	<	6	<	9	0.35	<	0.010	<	0.28	AA	0.018
7/19/2004	<	5.1	<	6	<	9	0.36	<	0.017	<	0.45	AA	0.029
7/26/2004	<	5.3	<	6	<	9	0.39	<	0.022	<	0.53	AA	0.036
8/2/2004	<	5.5	<	6	<	9	0.40	<	0.017	<	0.42	AA	0.028
8/9/2004	<	3.9	<	6	<	9	0.40	<	0.012	<	0.29	AA	0.021
8/16/2004	<	3.5		7	<	9	0.46	<	0.016		0.40	AA	0.027
8/23/2004	<	3.5	<	6	<	9	0.44	<	0.011	<	0.24	AA	0.019
8/30/2004	<	4.7	<	6	<	10	0.31	<	0.017	<	0.51	AA	0.028
9/6/2004	<	4.6	<	6	<	10	0.35	<	0.009	<	0.25	AA	0.015
9/13/2004	<	3.9		6	<	9	0.36	<	0.019		0.54	AA	0.031
9/20/2004	<	3.6		8	<	9	0.36	<	0.021		0.74	AA	0.034
9/27/2004	<	4.2	<	7	<	9	0.35	<	0.010	<	0.31	AA	0.016
Total	<	57.2	<	79	<	117	4.84	<	0.189	<	5.21	AA	0.316
Average	<	4.4	<	6	<	9	0.37	<	0.015	<	0.40	AA	0.024
Maximum	<	5.5		8	<	10	0.46	<	0.022		0.74	AA	0.036
Minimum	<	3.5	<	6	<	9	0.31	<	0.008	<	0.24	AA	0.013

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
005080304	< 0.157	< 0.234	< 0.045	< 0.154

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations								Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
7/5/2004	<	5.1		6		12	4.06	<	0.025		0.064	0.12	0.042
7/12/2004	<	4.6	<	7	<	9	3.76	<	0.016	<	0.052	AA	0.026
7/19/2004	<	5.6	<	6	<	9	4.95	<	0.017	<	0.033	AA	0.029
7/26/2004	<	5.5	<	6	<	9	3.48	<	0.035	<	0.099	AA	0.058
8/2/2004		6.7		13	<	9	4.84		0.066		0.128	AA	0.048
8/9/2004		7.5		10	<	9	5.30		0.063		0.084	AA	0.045
8/16/2004	<	4.1	<	6	<	9	5.48	<	0.018	<	0.033	AA	0.030
8/23/2004	<	3.7		6	<	9	4.74	<	0.020		0.046	AA	0.034
8/30/2004	<	4.4	<	6	<	10	1.83	<	0.010	<	0.053	AA	0.017
9/6/2004		4.5	<	6	<	9	5.25		0.024	<	0.031	AA	0.029
9/13/2004		4.7		7	<	9	4.66		0.062		0.094	AA	0.061
9/20/2004	<	4.2		8	<	9	4.57	<	0.035		0.105	AA	0.058
9/27/2004		5.1		7	<	9	0.67		0.028		0.039	AA	0.004
Total	<	65.7	<	94	<	120	53.59	<	0.419	<	0.861	0.12	0.482
Average	<	5.1	<	7	<	9	4.12	<	0.032	<	0.066	0.12	0.037
Maximum		7.5		13	<	12	5.48		0.066		0.128	0.12	0.061
Minimum	<	3.7	<	6	<	9	0.67	<	0.010	<	0.031	0.12	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009080304	< 0.057	< 0.307	< 0.170	< 0.170

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/5/2004	< 5.0	< 6	< 9	1.94	< 0.010	< 0.048	AA	0.017
7/12/2004	< 5.0	< 8	< 9	2.49	< 0.010	< 0.049	AA	0.016
7/19/2004	< 5.8	< 6	< 9	1.68	< 0.005	< 0.031	AA	0.009
7/26/2004	6.9	< 6	< 9	1.40	0.056	< 0.048	AA	0.011
8/2/2004	< 6.1	9	< 9	2.43	< 0.014	0.087	AA	0.024
8/9/2004	< 4.2	8	< 9	1.90	< 0.010	0.070	AA	0.016
8/16/2004	< 4.2	< 6	< 9	1.62	< 0.006	< 0.038	AA	0.010
8/23/2004	< 3.8	< 6	< 9	1.44	< 0.007	< 0.044	AA	0.011
8/30/2004	< 4.8	7	< 10	1.53	< 0.009	0.066	AA	0.014
9/6/2004	< 4.1	< 6	< 9	1.24	< 0.006	< 0.046	AA	0.010
9/13/2004	5.2	< 6	< 9	1.99	0.067	< 0.073	AA	0.025
9/20/2004	< 4.5	< 7	< 10	1.72	< 0.013	< 0.086	AA	0.022
9/27/2004	< 4.5	< 7	< 9	1.92	< 0.009	< 0.053	AA	0.015
Total	< 64.1	< 86	< 117	23.30	< 0.222	< 0.739	AA	0.201
Average	< 4.9	< 7	< 9	1.79	< 0.017	< 0.057	AA	0.015
Maximum	6.9	9	< 10	2.49	0.067	0.087	AA	0.025
Minimum	< 3.8	< 6	< 9	1.24	< 0.005	< 0.031	AA	0.009

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010080304	< 0.167	< 0.321	< 0.052	< 0.141

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/5/2004	< 5.2	< 6	< 9	0.99	< 0.0002	< 0.0020	AA	0.0003
7/12/2004	< 5.1	< 8	< 9	0.94	< 0.0000	< 0.0010	AA	0.0001
7/19/2004	< 5.8	< 6	< 9	0.96	< 0.0000	< 0.0000	AA	0.0001
7/26/2004	< 6.1	< 6	< 9	0.75	< 0.0002	< 0.0030	AA	0.0003
8/2/2004	< 5.9	8	< 9	1.01	< 0.0001	0.0020	AA	0.0002
8/9/2004	< 4.4	< 6	< 9	1.11	< 0.0003	< 0.0020	AA	0.0004
8/16/2004	< 4.3	< 6	< 9	1.19	< 0.0001	< 0.0010	AA	0.0001
8/23/2004	< 3.9	< 6	< 9	1.04	< 0.0001	< 0.0010	AA	0.0001
8/30/2004	< 5.2	< 6	< 10	0.87	< 0.0001	< 0.0010	AA	0.0002
9/6/2004	< 4.4	< 6	< 9	1.05	< 0.0001	< 0.0010	AA	0.0002
9/13/2004	< 4.3	< 6	< 9	0.98	< 0.0003	< 0.0030	AA	0.0004
9/20/2004	< 4.5	7	< 9	1.07	< 0.0007	0.0080	AA	0.0012
9/27/2004	< 4.7	< 7	< 9	0.94	< 0.0002	< 0.0020	AA	0.0003
Total	< 63.8	< 82	< 116	12.90	< 0.0024	< 0.0270	AA	0.0039
Average	< 4.9	< 6	< 9	0.99	< 0.0002	< 0.0021	AA	0.0003
Maximum	< 6.1	8	< 10	1.19	< 0.0007	0.0080	AA	0.0012
Minimum	< 3.9	< 6	< 9	0.75	< 0.0000	< 0.0000	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011080304	< 0.157	< 0.230	< 0.177	< 0.140

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentration has been found in any USEC-leased outfall within the past fifteen years.

AA indicates no detectable concentration.

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/4/2004	< 3.3	< 7	< 9	0.34	< 0.02	< 0.11	< 0.15	0.005
10/11/2004	< 5.0	< 6	< 9	0.33	< 0.02	< 0.09	< 0.14	0.005
10/18/2004	< 3.3	< 6	< 9	0.46	< 0.03	< 0.10	< 0.15	0.007
10/25/2004	5.3	8	< 9	0.85	0.09	0.13	< 0.16	0.014
11/1/2004	2.5	< 7	< 9	0.58	0.04	< 0.11	< 0.14	0.009
11/8/2004	3.8	< 7	< 9	1.19	0.06	< 0.12	< 0.15	0.020
11/15/2004	3.1	11	< 9	0.76	0.06	0.20	< 0.17	0.014
11/22/2004	< 4.3	15	15	1.22	< 0.08	0.28	0.28	0.023
11/29/2004	3.6	19	16	1.42	0.06	0.31	0.26	0.024
12/6/2004	4.9	19	25	1.47	0.08	0.31	0.42	0.024
12/13/2004	7.9	17	20	2.00	0.13	0.27	0.31	0.032
12/20/2004	4.6	8	11	0.95	0.02	0.04	0.06	0.005
12/27/2004	< 4.8	7	15	0.79	< 0.04	0.11	0.23	0.012
Total	< 56.4	< 136	< 165	12.36	< 0.72	< 2.19	< 2.62	0.196
Average	< 4.3	< 10	< 13	0.95	< 0.06	< 0.17	< 0.20	0.015
Maximum	7.9	19	25	2.00	0.13	0.31	0.42	0.032
Minimum	< 2.5	< 6	< 9	0.33	< 0.02	0.04	0.06	0.005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001120104	< 0.060	< 0.147	< 0.054	< 0.054

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/4/2004	< 4.2	< 7	< 9	0.60	< 0.001	< 0.02	AA	0.002
10/11/2004	AL	AL	AL	AL	AL	AL	AL	AL
10/18/2004	< 4.7	9	< 10	0.47	< 0.005	0.16	AA	0.008
10/25/2004	< 3.3	15	< 9	0.43	< 0.004	0.22	AA	0.007
11/1/2004	4.2	< 7	< 9	0.73	0.022	< 0.04	AA	0.004
11/8/2004	5.2	< 7	< 9	0.62	0.096	< 0.13	AA	0.011
11/15/2004	3.9	9	< 9	0.71	0.072	0.17	AA	0.013
11/22/2004	< 5.0	< 7	< 9	0.77	< 0.011	< 0.17	AA	0.018
11/29/2004	< 3.5	9	< 9	0.88	< 0.011	0.19	AA	0.019
12/6/2004	< 3.5	< 7	< 9	1.01	< 0.013	< 0.15	AA	0.022
12/13/2004	< 5.9	< 6	< 9	1.04	< 0.019	< 0.18	AA	0.031
12/20/2004	< 5.4	< 6	< 9	1.04	< 0.004	< 0.04	AA	0.007
12/27/2004	< 6.4	8	< 9	0.98	< 0.009	0.13	AA	0.015
Total	< 55.2	< 98	< 109	9.28	< 0.267	< 1.60	AA	0.157
Average	< 4.6	< 8	< 9	0.77	< 0.022	< 0.13	AA	0.013
Maximum	< 6.4	15	< 10	1.04	0.096	0.22	AA	0.031
Minimum	< 3.3	< 6	< 9	0.43	< 0.001	< 0.02	AA	0.002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002120104	< 0.207	< 0.266	< 0.060	< 0.163

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/4/2004	8.0	152	221	3.97	0.05	0.95	1.38	0.025
10/11/2004	6.6	132	193	3.33	0.04	0.77	1.13	0.020
10/18/2004	5.9	135	191	3.54	0.04	0.95	1.35	0.025
10/25/2004	9.4	125	170	5.79	0.07	0.94	1.28	0.044
11/1/2004	11.3	106	166	5.51	0.08	0.73	1.15	0.038
11/8/2004	11.0	137	208	8.02	0.09	1.13	1.72	0.066
11/15/2004	12.3	119	158	7.30	0.10	0.95	1.26	0.058
11/22/2004	15.7	161	197	9.67	0.13	1.36	1.66	0.082
11/29/2004	11.2	114	155	8.09	0.10	0.97	1.32	0.069
12/6/2004	15.0	109	151	9.41	0.13	0.94	1.30	0.081
12/13/2004	8.5	95	129	4.29	0.08	0.85	1.15	0.038
12/20/2004	< 6.1	90	145	5.61	< 0.05	0.73	1.18	0.046
12/27/2004	< 5.7	71	120	4.69	< 0.05	0.62	1.04	0.041
Total	< 126.7	1547	2204	79.22	< 1.00	11.89	16.90	0.631
Average	< 9.7	119	170	6.09	< 0.08	0.91	1.30	0.049
Maximum	15.7	161	221	9.67	0.13	1.36	1.72	0.082
Minimum	< 5.7	71	120	3.33	0.04	0.62	1.04	0.020

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003120104	< 0.142	< 0.226	< 0.154	< 0.154

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/4/2004	< 3.4	10	< 9	1.51	< 0.016	0.175	AA	0.027
10/11/2004	< 5.3	10	< 9	1.09	< 0.012	0.175	AA	0.020
10/18/2004	< 3.7	13	< 9	0.96	< 0.010	0.209	AA	0.016
10/25/2004	< 2.7	13	< 9	0.74	< 0.008	0.239	AA	0.014
11/1/2004	3.3	11	< 9	1.46	0.059	0.191	AA	0.026
11/8/2004	< 2.4	12	< 9	0.90	< 0.010	0.223	AA	0.016
11/15/2004	< 3.9	9	< 9	0.51	< 0.006	0.165	AA	0.010
11/22/2004	< 4.6	8	< 9	2.04	< 0.025	0.166	AA	0.041
11/29/2004	< 4.7	10	< 9	1.47	< 0.018	0.196	AA	0.030
12/6/2004	< 3.1	11	< 9	0.94	< 0.010	0.181	AA	0.016
12/13/2004	< 4.8	7	< 9	0.75	< 0.004	0.067	AA	0.007
12/20/2004	< 5.5	12	< 9	0.80	< 0.004	0.101	AA	0.007
12/27/2004	< 5.1	8	< 9	0.45	< 0.002	0.054	AA	0.003
Total	< 52.5	131	< 117	13.62	< 0.184	2.142	AA	0.233
Average	< 4.0	10	< 9	1.05	< 0.014	0.165	AA	0.018
Maximum	< 5.5	13	< 9	2.04	0.059	0.239	AA	0.041
Minimum	< 2.4	7	< 9	0.45	< 0.002	0.054	AA	0.003

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004120104	< 0.169	< 0.065	< 0.177	< 0.065

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
10/4/2004	<	3.3	<	7	<	9	0.43	<	0.02	<	0.58	AA	0.036
10/11/2004	<	4.8	<	6	<	9	0.42	<	0.02	<	0.37	AA	0.027
10/18/2004	<	3.3		7	<	9	0.45	<	0.02		0.50	AA	0.031
10/25/2004		2.6	<	5	<	9	0.29		0.30	<	0.59	AA	0.033
11/1/2004		2.1	<	7	<	9	0.35		0.20	<	0.65	AA	0.033
11/8/2004		3.6	<	7	<	9	0.40		0.34	<	0.66	AA	0.038
11/15/2004		4.8	<	7	<	9	0.32		0.43	<	0.59	AA	0.028
11/22/2004	<	4.2	<	7	<	9	0.39	<	0.02	<	0.71	AA	0.040
11/29/2004		AL		AL		AL	AL		AL		AL	AL	AL
12/6/2004		AL		AL		AL	AL		AL		AL	AL	AL
12/13/2004		AL		AL		AL	AL		AL		AL	AL	AL
12/20/2004		AL		AL		AL	AL		AL		AL	AL	AL
12/27/2004		AL		AL		AL	AL		AL		AL	AL	AL
Total	<	28.7	<	52	<	73	3.05	<	1.35	<	4.64	AA	0.265
Average	<	3.6	<	7	<	9	0.38	<	0.17	<	0.58	AA	0.033
Maximum		4.8		7	<	9	0.45		0.43	<	0.71	AA	0.040
Minimum		2.1	<	5	<	9	0.29	<	0.02	<	0.37	AA	0.027

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
	AL	AL	AL	AL

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
10/4/2004		3.4	<	7	<	9	4.01		0.017	<	0.034	AA	0.020
10/11/2004	<	5.0	<	6	<	9	4.40	<	0.013	<	0.028	AA	0.021
10/18/2004		3.9		7	<	9	5.08		0.047		0.080	AA	0.062
10/25/2004		4.6		11	<	9	7.58		0.046		0.113	AA	0.076
11/1/2004		8.6	<	7	<	9	6.32		0.069	<	0.056	AA	0.051
11/8/2004		7.2		8	<	9	7.32		0.092		0.103	AA	0.094
11/15/2004	<	3.8		8	<	9	6.68	<	0.046		0.091	AA	0.081
11/22/2004		5.3	<	7	<	9	6.94		0.094	<	0.126	AA	0.123
11/29/2004		7.9		8		20	7.25		0.141		0.140	0.35	0.129
12/6/2004		5.0		10	<	9	6.60		0.076		0.148	AA	0.102
12/13/2004		4.8	<	6	<	9	6.65		0.104	<	0.123	AA	0.144
12/20/2004	<	5.3	<	6	<	9	6.34	<	0.023	<	0.034	AA	0.038
12/27/2004		6.5	<	6	<	9	6.17		0.071	<	0.061	AA	0.068
Total	<	71.3	<	94	<	128	81.34	<	0.839	<	1.137	0.35	1.009
Average	<	5.5	<	7	<	10	6.26	<	0.065	<	0.087	0.35	0.078
Maximum		8.6		11		20	7.58		0.141		0.148	0.35	0.144
Minimum		3.4	<	6	<	9	4.01	<	0.013	<	0.028	0.35	0.020

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009120104	< 0.186	< 0.236	< 0.211	< 0.053

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/4/2004	< 3.5	< 7	< 9	1.13	< 0.005	< 0.052	AA	0.008
10/11/2004	< 5.2	< 6	< 9	0.95	< 0.004	< 0.040	AA	0.007
10/18/2004	< 3.5	7	< 9	1.50	< 0.007	0.056	AA	0.012
10/25/2004	< 2.5	7	< 9	3.09	< 0.019	0.067	AA	0.032
11/1/2004	5.6	< 7	< 9	3.06	0.044	< 0.055	AA	0.024
11/8/2004	5.9	8	< 9	3.75	0.060	0.077	AA	0.038
11/15/2004	4.2	10	< 9	3.69	0.038	0.093	AA	0.034
11/22/2004	< 4.5	< 7	< 9	3.51	< 0.026	< 0.089	AA	0.044
11/29/2004	< 4.4	< 7	< 9	3.09	< 0.033	< 0.125	AA	0.054
12/6/2004	7.2	9	< 9	3.29	0.087	0.103	AA	0.040
12/13/2004	8.1	< 6	< 9	4.08	0.097	< 0.068	AA	0.049
12/20/2004	< 5.4	< 6	< 9	3.82	< 0.010	< 0.024	AA	0.017
12/27/2004	< 5.2	< 6	< 9	2.75	< 0.020	< 0.068	AA	0.034
Total	< 65.2	< 90	< 118	37.71	< 0.450	< 0.917	AA	0.393
Average	< 5.0	< 7	< 9	2.90	< 0.035	< 0.071	AA	0.030
Maximum	8.1	10	< 9	4.08	0.097	< 0.125	AA	0.054
Minimum	< 2.5	< 6	< 9	0.95	< 0.004	< 0.024	AA	0.007

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010120104	< 0.063	< 0.155	< 0.057	< 0.057

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/4/2004	< 3.5	< 7	< 9	0.96	< 0.0001	< 0.0010	AA	0.0001
10/11/2004	< 5.4	< 6	< 9	0.86	< 0.0000	< 0.0005	AA	0.0001
10/18/2004	< 3.6	7	< 9	0.97	< 0.0003	0.0040	AA	0.0006
10/25/2004	< 2.6	8	< 9	1.05	< 0.0001	0.0020	AA	0.0002
11/1/2004	3.7	< 7	< 9	1.19	0.0003	< 0.0010	AA	0.0001
11/8/2004	< 2.4	< 7	< 9	1.26	< 0.0013	< 0.0110	AA	0.0021
11/15/2004	< 3.9	< 7	< 9	1.04	< 0.0004	< 0.0050	AA	0.0007
11/22/2004	< 4.6	< 7	< 9	1.19	< 0.0012	< 0.0120	AA	0.0020
11/29/2004	9.1	8	< 9	1.37	0.0155	0.0140	AA	0.0023
12/6/2004	3.3	< 7	< 9	1.25	0.0011	< 0.0020	AA	0.0004
12/13/2004	< 4.6	< 6	< 9	1.28	< 0.0005	< 0.0040	AA	0.0008
12/20/2004	< 5.4	< 6	< 9	1.27	< 0.0001	< 0.0010	AA	0.0001
12/27/2004	5.7	< 6	< 9	1.03	0.0036	< 0.0040	AA	0.0007
Total	< 57.8	< 87	< 118	14.72	< 0.0246	< 0.0615	AA	0.0102
Average	< 4.4	< 7	< 9	1.13	< 0.0019	< 0.0047	AA	0.0008
Maximum	9.1	8	< 9	1.37	0.0155	0.0140	AA	0.0023
Minimum	< 2.4	< 6	< 9	0.86	< 0.0000	< 0.0005	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011120104	< 0.166	< 0.147	< 0.147	< 0.060

Plant Radiological Discharges to Surface Water
Calendar Year 2004 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples taken when there is an actual discharge.

Due to the reduction in the plant heat load associated with the end of uranium enrichment operations, PORTS has been unable to recycle all of the water entering the X-611B Lime Sludge Lagoon into the plant water system. Consequently, the X-611B (Outfall 005) has had a continuous overflow to Little Beaver Creek since the middle of May 2001.

In the week ending November 22, 2004, USEC completed an upgrade to its X-611 Water Treatment Plant which permitted USEC to resume recycling all the supernatent from the X-611B Lime Sludge Lagoon to the intake of the X-611 facility. Routine overflows from X-611B ceased at that time.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because no measurable transuranic concentrations are routinely not found in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
1/3/2005	<	2.5		6	<	9		0.57	<	0.026		0.083	<	0.112		0.008
1/10/2005		8.8		23		33		2.34		0.290		0.751		1.073		0.077
1/17/2005		3.2		19		19		1.67		0.058		0.343		0.334		0.030
1/24/2005	<	4.3		7		9		0.79	<	0.032		0.088		0.107		0.009
1/31/2005	<	4.2		6	<	9		0.91	<	0.039		0.075	<	0.111		0.011
2/7/2005	<	3.8	<	6	<	9		1.10	<	0.049	<	0.075	<	0.120		0.015
2/14/2005		5.5		7	<	9		1.28		0.099		0.122	<	0.163		0.023
2/21/2005		4.4		10		12		1.26		0.073		0.167		0.203		0.021
2/28/2005	<	2.3	<	7	<	9		0.58	<	0.037	<	0.126	<	0.175		0.011
3/7/2005		4.0		6	<	10		1.44		0.088		0.129	<	0.214		0.031
3/14/2005		4.5		6	<	9		1.28		0.043		0.052	<	0.086		0.012
3/21/2005		3.8		6	<	9		1.34		0.047		0.071	<	0.107		0.017
3/28/2005	<	3.6	<	5	<	9		1.25	<	0.079	<	0.116	<	0.191		0.027
Total	<	54.9	<	113	<	153		15.81	<	0.960	<	2.198	<	2.996		0.292
Average	<	4.2	<	9	<	12		1.22	<	0.074	<	0.169	<	0.230		0.022
Maximum		8.8		23		33		2.34		0.290		0.751		1.073		0.077
Minimum	<	2.3	<	5	<	9		0.57	<	0.026		0.052	<	0.086		0.008

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
001030105	<	0.178	<	0.224	<	0.065	<	0.223

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/3/2005	< 3.3	6	< 9	0.90	< 0.007	0.078	AA	0.012
1/10/2005	< 2.8	< 5	< 9	0.72	< 0.017	< 0.196	AA	0.028
1/17/2005	< 3.5	< 6	< 9	0.71	< 0.010	< 0.129	AA	0.016
1/24/2005	< 5.3	< 6	< 9	1.02	< 0.005	< 0.046	AA	0.008
1/31/2005	< 5.3	< 6	< 9	1.07	< 0.006	< 0.061	AA	0.011
2/7/2005	< 5.3	< 6	< 9	1.19	< 0.007	< 0.062	AA	0.012
2/14/2005	< 5.6	7	< 9	1.26	< 0.012	0.118	AA	0.021
2/21/2005	< 5.9	< 6	< 9	1.38	< 0.011	< 0.075	AA	0.018
2/28/2005	5.5	8	< 10	1.12	0.053	0.080	AA	0.011
3/7/2005	< 5.6	< 6	< 10	1.29	< 0.012	< 0.096	AA	0.020
3/14/2005	8.2	8	< 9	1.38	0.086	0.087	AA	0.015
3/21/2005	8.1	7	< 9	1.36	0.074	0.067	AA	0.013
3/28/2005	< 5.7	< 6	< 9	1.39	< 0.014	< 0.096	AA	0.023
Total	< 70.1	< 84	< 117	14.79	< 0.314	< 1.191	AA	0.206
Average	< 5.4	< 6	< 9	1.14	< 0.024	< 0.092	AA	0.016
Maximum	8.2	8	< 10	1.39	0.086	< 0.196	AA	0.028
Minimum	< 2.8	< 5	< 9	0.71	< 0.005	< 0.046	AA	0.008

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002030105	< 0.064	< 0.056	< 0.062	< 0.056

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/3/2005	5.5	87	131	4.32	0.043	0.68	1.02	0.034
1/10/2005	12.8	88	119	11.8	0.142	0.97	1.32	0.131
1/17/2005	8.5	96	121	5.17	0.077	0.86	1.09	0.047
1/24/2005	< 5.4	87	130	4.16	< 0.041	0.65	0.98	0.031
1/31/2005	6.4	77	145	6.69	0.047	0.57	1.07	0.049
2/7/2005	8.8	81	125	5.14	0.067	0.61	0.95	0.039
2/14/2005	6.4	104	146	5.86	0.047	0.76	1.07	0.043
2/21/2005	14.4	116	166	6.95	0.102	0.82	1.17	0.049
2/28/2005	10.0	118	160	7.08	0.068	0.80	1.09	0.048
3/7/2005	10.9	99	139	7.59	0.076	0.69	0.97	0.053
3/14/2005	7.5	107	168	6.16	0.049	0.71	1.11	0.041
3/21/2005	7.4	117	176	4.76	0.020	0.32	0.49	0.013
3/28/2005	8.6	151	233	6.66	0.006	0.10	0.16	0.005
Total	< 112.6	1326	1959	82.3	< 0.785	8.54	12.48	0.582
Average	< 8.7	102	151	6.33	< 0.060	0.66	0.96	0.045
Maximum	14.4	151	233	11.8	0.142	0.97	1.32	0.131
Minimum	< 5.4	77	119	4.16	0.006	0.10	0.16	0.005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003030205	< 0.198	< 0.067	< 0.230	< 0.074

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/5/2004	< 2.6	8	< 9	0.52	< 0.0030	0.075	AA	0.0051
1/12/2004	< 3.2	< 6	< 9	0.49	< 0.0030	< 0.058	AA	0.0050
1/19/2004	< 3.2	< 6	< 9	0.45	< 0.0040	< 0.076	AA	0.0061
1/26/2004	< 4.5	< 6	< 9	0.51	< 0.0030	< 0.066	AA	0.0056
2/2/2004	< 4.1	< 6	< 9	0.47	< 0.0020	< 0.051	AA	0.0041
2/9/2004	< 3.7	6	< 9	0.45	< 0.0020	0.048	AA	0.0036
2/16/2004	< 3.7	< 5	< 9	0.56	< 0.0030	< 0.051	AA	0.0053
2/23/2004	< 3.8	7	< 9	0.54	< 0.0040	0.081	AA	0.0065
3/1/2004	2.9	< 7	< 9	0.50	0.0300	< 0.072	AA	0.0053
3/8/2004	< 3.8	7	< 10	0.59	< 0.0030	0.053	AA	0.0047
3/15/2004	2.1	5	< 9	0.54	0.0130	0.031	AA	0.0034
3/22/2004	< 3.8	< 5	< 9	0.48	< 0.0020	< 0.030	AA	0.0027
3/29/2004	< 4.1	< 6	< 10	0.39	< 0.0020	< 0.057	AA	0.0037
Total	< 45.5	< 79	< 117	6.49	< 0.0740	< 0.749	AA	0.0611
Average	< 3.5	< 6	< 9	0.50	< 0.0057	< 0.058	AA	0.0047
Maximum	< 4.5	8	< 10	0.59	0.0300	0.081	AA	0.0065
Minimum	2.1	< 5	< 9	0.39	< 0.0020	< 0.030	AA	0.0027

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004030105	< 0.178	< 0.229	< 0.058	< 0.058

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations						Loadings				
	Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/3/2005	AL		AL		AL	AL	AL		AL	AL	AL
1/10/2005	2.6	<	5	<	9	0.25	0.167	<	0.32	AA	0.016
1/17/2005	AL		AL		AL	AL	AL		AL	AL	AL
1/24/2005	AL		AL		AL	AL	AL		AL	AL	AL
1/31/2005	AL		AL		AL	AL	AL		AL	AL	AL
2/7/2005	AL		AL		AL	AL	AL		AL	AL	AL
2/14/2005	AL		AL		AL	AL	AL		AL	AL	AL
2/21/2005	AL		AL		AL	AL	AL		AL	AL	AL
2/28/2005	AL		AL		AL	AL	AL		AL	AL	AL
3/7/2005	AL		AL		AL	AL	AL		AL	AL	AL
3/14/2005	AL		AL		AL	AL	AL		AL	AL	AL
3/21/2005	AL		AL		AL	AL	AL		AL	AL	AL
3/28/2005	AL		AL		AL	AL	AL		AL	AL	AL
Total	2.6	<	5	<	9	0.25	0.167	<	0.32	AA	0.016
Average	2.6	<	5	<	9	0.25	0.167	<	0.32	AA	0.016
Maximum	2.6	<	5	<	9	0.25	0.167	<	0.32	AA	0.016
Minimum	2.6	<	5	<	9	0.25	0.167	<	0.32	AA	0.016

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
005010705	< 0.198	< 0.193	< 0.153	< 0.153

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/3/2005	9.0	6	< 9	7.08	0.115	0.076	AA	0.091
1/10/2005	7.9	< 6	< 9	5.01	0.231	< 0.165	AA	0.146
1/17/2005	4.0	6	< 9	5.23	0.070	0.108	AA	0.092
1/24/2005	7.3	< 6	< 9	5.95	0.059	< 0.047	AA	0.048
1/31/2005	< 5.2	< 6	< 9	6.21	< 0.041	< 0.066	AA	0.069
2/7/2005	12.3	9	< 9	6.77	0.177	0.125	AA	0.097
2/14/2005	8.2	9	10	6.86	0.151	0.158	0.18	0.126
2/21/2005	8.5	7	< 9	5.79	0.088	0.073	AA	0.060
2/28/2005	4.8	9	< 9	4.89	0.065	0.121	AA	0.066
3/7/2005	4.2	< 6	< 10	6.36	0.070	< 0.098	AA	0.107
3/14/2005	5.1	7	< 9	5.76	0.059	0.081	AA	0.066
3/21/2005	4.4	< 6	< 9	5.92	0.050	< 0.062	AA	0.067
3/28/2005	< 4.7	< 6	< 10	5.47	< 0.066	< 0.125	AA	0.110
Total	< 85.6	< 88	< 118	77.30	< 1.242	< 1.305	0.18	1.145
Average	< 6.6	< 7	< 9	5.95	< 0.096	< 0.100	0.18	0.088
Maximum	12.3	9	10	7.1	0.231	< 0.165	0.18	0.146
Minimum	4.0	< 6	< 9	4.89	< 0.041	< 0.047	0.18	0.048

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009030105	< 0.183	< 0.251	< 0.063	< 0.171

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
1/3/2005	<	2.8	<	5	<	9	2.92	<	0.015	<	0.044	AA	0.025
1/10/2005		3.9	<	6	<	9	2.54		0.059	<	0.084	AA	0.038
1/17/2005		6.4		6	<	9	3.00		0.069		0.061	AA	0.032
1/24/2005	<	5.2	<	6	<	9	3.14	<	0.016	<	0.051	AA	0.026
1/31/2005		6.1	<	6	<	9	3.89		0.057	<	0.057	AA	0.037
2/7/2005		5.9	<	6	<	9	4.27		0.050	<	0.051	AA	0.036
2/14/2005	<	4.7	<	6	<	9	4.57	<	0.030	<	0.062	AA	0.050
2/21/2005		7.7		8	<	9	4.99		0.053		0.051	AA	0.034
2/28/2005		5.1	<	7	<	9	4.22		0.039	<	0.054	AA	0.032
3/7/2005		6.0	<	6	<	10	5.27		0.057	<	0.056	AA	0.050
3/14/2005		7.1		6	<	9	4.72		0.053		0.045	AA	0.036
3/21/2005	<	4.4	<	6	<	9	3.61	<	0.015	<	0.038	AA	0.025
3/28/2005		6.3	<	6	<	10	4.07		0.070	<	0.069	AA	0.046
Total	<	71.6	<	78	<	117	51.21	<	0.583	<	0.723	AA	0.467
Average	<	5.5	<	6	<	9	3.94	<	0.045	<	0.056	AA	0.036
Maximum		7.7		8	<	10	5.27		0.070	<	0.084	AA	0.050
Minimum	<	2.8	<	5	<	9	2.54	<	0.015	<	0.038	AA	0.025

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
010030105	<	0.199	<	0.164	<	0.239	<	0.163

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/3/2005	< 2.8	6	< 9	1.17	< 0.0005	0.0040	AA	0.0008
1/10/2005	< 3.1	< 6	< 9	1.04	< 0.0010	< 0.0090	AA	0.0017
1/17/2005	< 3.3	< 6	< 9	1.44	< 0.0006	< 0.0040	AA	0.0009
1/24/2005	< 4.7	8	< 9	1.23	< 0.0001	0.0010	AA	0.0002
1/31/2005	< 4.6	< 6	< 9	1.28	< 0.0001	< 0.0010	AA	0.0001
2/7/2005	< 4.5	< 6	< 9	1.32	< 0.0001	< 0.0010	AA	0.0002
2/14/2005	< 4.5	< 6	< 9	1.67	< 0.0003	< 0.0010	AA	0.0004
2/21/2005	5.8	< 6	< 9	1.52	0.0004	< 0.0000	AA	0.0001
2/28/2005	3.0	< 7	< 9	1.21	0.0006	< 0.0010	AA	0.0002
3/7/2005	< 4.2	< 6	< 10	1.59	< 0.0001	< 0.0010	AA	0.0002
3/14/2005	3.7	5	< 9	1.26	0.0003	0.0000	AA	0.0001
3/21/2005	6.6	6	< 9	1.13	0.0008	0.0010	AA	0.0001
3/28/2005	< 4.7	< 6	< 10	1.39	< 0.0007	< 0.0050	AA	0.0011
Total	< 55.5	< 79	< 117	17.25	< 0.0054	< 0.0290	AA	0.0061
Average	< 4.3	< 6	< 9	1.33	< 0.0004	< 0.0022	AA	0.0005
Maximum	6.6	8	< 10	1.67	< 0.0010	< 0.0090	AA	0.0017
Minimum	< 2.8	5	< 9	1.04	< 0.0001	0.0000	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011031505	< 0.393	< 0.248	< 0.328	< 0.057

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

A rainfall event resulted in flow from Outfall 005 during the week ending Jan 10. Grab samples were collected for both the weekly radiological parameters and the transuranic parameters during the intial day of flow and for the weekly parameters only on the following Monday (Jan 10). All radiological parameters were below their MDA/LLD in the Monday sample; therefore only the initial sample results are being reported.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/4/2005	< 3.9	14	15	1.81	< 0.097	0.36	0.37	0.045
4/11/2005	4.3	10	< 9	0.72	0.118	0.28	< 0.26	0.020
4/18/2005	< 3.0	< 6	< 10	0.45	< 0.047	< 0.18	< 0.29	0.014
4/25/2005	< 2.7	< 7	< 9	0.68	< 0.086	< 0.27	< 0.34	0.025
5/2/2005	< 4.5	10	< 9	1.37	< 0.169	0.37	< 0.34	0.051
5/9/2005	< 3.6	8	< 9	0.64	< 0.074	0.28	< 0.31	0.022
5/16/2005	< 2.5	7	< 10	0.48	< 0.057	0.25	< 0.33	0.017
5/23/2005	< 3.5	< 5	< 10	0.69	< 0.103	< 0.23	< 0.42	0.030
5/30/2005	< 2.8	< 7	< 9	0.40	< 0.043	< 0.22	< 0.29	0.013
6/6/2005	< 3.5	< 7	< 9	0.63	< 0.055	< 0.19	< 0.23	0.016
6/13/2005	< 3.8	< 6	< 9	0.39	< 0.035	< 0.15	< 0.25	0.010
6/20/2005	< 3.4	< 6	< 9	0.45	< 0.042	< 0.16	< 0.25	0.012
6/27/2005	< 3.5	< 6	< 9	0.33	< 0.023	< 0.12	< 0.19	0.007
Total	< 45.0	< 100	< 126	9.04	< 0.949	< 3.04	< 3.86	0.281
Average	< 3.5	< 8	< 10	0.70	< 0.073	< 0.23	< 0.30	0.022
Maximum	< 4.5	14	15	1.81	< 0.169	0.37	< 0.42	0.051
Minimum	< 2.5	< 5	< 9	0.33	< 0.023	< 0.12	< 0.19	0.007

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001060105	< 0.181	< 0.062	< 0.056	< 0.056

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/4/2005	< 4.8	< 6	< 10	0.84	< 0.016	< 0.193	AA	0.026
4/11/2005	< 4.7	< 5	< 10	0.75	< 0.010	< 0.112	AA	0.016
4/18/2005	6.6	7	< 10	0.73	0.078	0.077	AA	0.009
4/25/2005	< 3.4	< 8	< 9	0.84	< 0.006	< 0.085	AA	0.009
5/2/2005	< 7.1	8	< 9	0.93	< 0.007	0.100	AA	0.012
5/9/2005	< 5.5	8	< 9	0.97	< 0.004	0.058	AA	0.007
5/16/2005	< 3.7	< 5	< 10	0.97	< 0.005	< 0.045	AA	0.008
5/23/2005	< 5.6	7	< 10	1.23	< 0.009	0.084	AA	0.014
5/30/2005	< 4.3	< 8	< 9	1.09	< 0.004	< 0.042	AA	0.006
6/6/2005	< 5.4	< 8	< 9	1.02	< 0.003	< 0.039	AA	0.005
6/13/2005	< 6.1	7	< 9	1.06	< 0.004	0.047	AA	0.007
6/20/2005	< 5.1	< 6	< 9	0.71	< 0.005	< 0.069	AA	0.008
6/27/2005	< 5.2	< 6	< 9	0.74	< 0.000	< 0.000	AA	0.000
Total	< 67.5	< 89	< 122	11.88	< 0.149	< 0.950	AA	0.128
Average	< 5.2	< 7	< 9	0.91	< 0.011	< 0.073	AA	0.010
Maximum	< 7.1	8	< 10	1.23	0.078	0.193	AA	0.026
Minimum	< 3.4	< 5	< 9	0.71	< 0.000	< 0.000	AA	0.000

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002060105	< 0.064	< 0.261	< 0.178	< 0.065

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/4/2005	6.4	113	157	7.86	0.037	0.66	0.91	0.046
4/11/2005	10.6	162	258	6.38	0.056	0.86	1.37	0.034
4/18/2005	6.7	199	270	4.62	0.036	1.08	1.46	0.025
4/25/2005	6.0	109	135	3.29	0.041	0.74	0.92	0.023
5/2/2005	< 5.7	94	123	6.99	< 0.044	0.73	0.96	0.055
5/9/2005	9.7	95	122	6.01	0.056	0.54	0.70	0.035
5/16/2005	8.9	93	113	3.91	0.057	0.60	0.73	0.025
5/23/2005	12.1	101	129	7.18	0.081	0.68	0.86	0.048
5/30/2005	22.3	107	136	12.5	0.122	0.59	0.75	0.069
6/6/2005	7.9	94	141	4.64	0.044	0.53	0.79	0.026
6/13/2005	9.1	96	131	7.60	0.063	0.67	0.91	0.053
6/20/2005	49.6	100	137	25.1	0.392	0.79	1.08	0.198
6/27/2005	55.4	112	145	25.1	0.376	0.76	0.99	0.170
Total	< 210.4	1475	1997	121.2	< 1.406	9.22	12.42	0.804
Average	< 16.2	113	154	9.32	< 0.108	0.71	0.96	0.062
Maximum	55.4	199	270	25.1	0.392	1.08	1.46	0.198
Minimum	< 5.7	93	113	3.29	< 0.036	0.53	0.70	0.023

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003060205	< 0.083	< 0.252	< 0.200	< 0.073

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
4/4/2005	<	4.1	<	6	<	10		0.60	<	0.0055	<	0.093		AA		0.0092
4/11/2005	<	4.2		8	<	9		0.77	<	0.0052		0.095		AA		0.0087
4/18/2005	<	3.2	<	6	<	10		1.39	<	0.0025	<	0.018		AA		0.0042
4/25/2005		AL		AL		AL		AL		AL		AL		AL		AL
5/2/2005	<	4.9		10	<	9		0.87	<	0.0010		0.018		AA		0.0016
5/9/2005	<	3.9		14	<	9		0.95	<	0.0003		0.007		AA		0.0005
5/16/2005	<	2.7		11	<	10		1.03	<	0.0008		0.014		AA		0.0013
5/23/2005	<	3.8		15	<	10		1.28	<	0.0022		0.042		AA		0.0036
5/30/2005		4.2		13	<	9		1.35		0.0219		0.070		AA		0.0071
6/6/2005	<	3.9		15	<	9		1.06	<	0.0079		0.192		AA		0.0132
6/13/2005	<	4.2		12	<	9		1.28	<	0.0100		0.153		AA		0.0166
6/20/2005	<	4.2		13	<	9		0.95	<	0.0039		0.088		AA		0.0065
6/27/2005	<	3.8		12	<	9		0.95	<	0.0033		0.069		AA		0.0054
Total	<	47.1	<	135	<	111		12.48	<	0.0644	<	0.858		AA		0.0778
Average	<	3.9	<	11	<	9		1.04	<	0.0054	<	0.072		AA		0.0065
Maximum	<	4.9		15	<	10		1.39		0.0219		0.192		AA		0.0166
Minimum	<	2.7	<	6	<	9		0.60	<	0.0003	<	0.007		AA		0.0005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004060105	< 0.063	< 0.143	< 0.209	< 0.209

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/4/2005	< 3.7	< 6	< 10	0.25	< 0.006	< 0.22	AA	0.010
4/11/2005	AL	AL	AL	AL	AL	AL	AL	AL
4/18/2005	AL	AL	AL	AL	AL	AL	AL	AL
4/25/2005	AL	AL	AL	AL	AL	AL	AL	AL
5/2/2005	AL	AL	AL	AL	AL	AL	AL	AL
5/9/2005	AL	AL	AL	AL	AL	AL	AL	AL
5/16/2005	AL	AL	AL	AL	AL	AL	AL	AL
5/23/2005	AL	AL	AL	AL	AL	AL	AL	AL
5/30/2005	AL	AL	AL	AL	AL	AL	AL	AL
6/6/2005	AL	AL	AL	AL	AL	AL	AL	AL
6/13/2005	AL	AL	AL	AL	AL	AL	AL	AL
6/20/2005	AL	AL	AL	AL	AL	AL	AL	AL
6/27/2005	AL	AL	AL	AL	AL	AL	AL	AL
Total	< 3.7	< 6	< 10	0.25	< 0.006	< 0.22	AA	0.010
Average	< 3.7	< 6	< 10	0.25	< 0.006	< 0.22	AA	0.010
Maximum	< 3.7	< 6	< 10	0.25	< 0.006	< 0.22	AA	0.010
Minimum	< 3.7	< 6	< 10	0.25	< 0.006	< 0.22	AA	0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
005032905	< 0.412	< 0.237	< 0.374	< 0.207

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/4/2005	< 4.3	6	< 10	5.04	< 0.061	0.124	AA	0.101
4/11/2005	5.9	6	< 9	5.02	0.053	0.053	AA	0.045
4/18/2005	5.3	< 6	< 10	4.77	0.035	< 0.039	AA	0.032
4/25/2005	5.9	< 7	< 9	4.19	0.104	< 0.128	AA	0.074
5/2/2005	< 4.9	10	< 9	3.73	< 0.030	0.132	AA	0.050
5/9/2005	3.8	8	< 9	4.46	0.022	0.046	AA	0.026
5/16/2005	11.0	8	< 10	3.55	0.091	0.066	AA	0.029
5/23/2005	< 3.6	7	< 10	4.36	< 0.022	0.058	AA	0.037
5/30/2005	5.3	< 7	< 9	4.63	0.032	< 0.043	AA	0.028
6/6/2005	4.2	< 8	< 9	3.50	0.027	< 0.047	AA	0.022
6/13/2005	< 3.9	6	< 9	3.59	< 0.014	0.037	AA	0.024
6/20/2005	< 3.9	7	< 9	3.47	< 0.017	0.057	AA	0.028
6/27/2005	3.6	< 6	< 9	3.95	0.019	< 0.030	AA	0.021
Total	< 65.6	< 91	< 121	54.26	< 0.526	< 0.861	AA	0.517
Average	< 5.0	< 7	< 9	4.17	< 0.040	< 0.066	AA	0.040
Maximum	11.0	10	< 10	5.04	0.104	0.132	AA	0.101
Minimum	< 3.6	< 6	< 9	3.47	< 0.014	< 0.030	AA	0.021

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009060105	< 0.070	< 0.055	< 0.055	0.187

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
4/4/2005	<	4.3	<	6	<	10	1.43	<	0.00087	<	0.0062	AA	0.00145
4/11/2005	<	4.4	<	5	<	9	1.25	<	0.00018	<	0.0012	AA	0.00029
4/18/2005	<	3.5	<	6	<	10	1.05	<	0.00007	<	0.0007	AA	0.00012
4/25/2005	<	2.9	<	7	<	9	0.85	<	0.00010	<	0.0014	AA	0.00017
5/2/2005	<	5.0		6	<	9	1.14	<	0.00015		0.0014	AA	0.00025
5/9/2005	<	4.0		6	<	9	1.09	<	0.00019		0.0016	AA	0.00032
5/16/2005	<	2.6	<	5	<	10	0.74	<	0.00029	<	0.0032	AA	0.00048
5/23/2005	<	3.7	<	5	<	10	0.97	<	0.00021	<	0.0020	AA	0.00035
5/30/2005	<	3.1		9	<	9	0.80	<	0.00023		0.0044	AA	0.00039
6/6/2005	<	3.8	<	8	<	9	0.50	<	0.00009	<	0.0022	AA	0.00014
6/13/2005	<	4.1	<	6	<	9	0.69	<	0.00006	<	0.0008	AA	0.00010
6/20/2005	<	4.0	<	6	<	9	0.74	<	0.00006	<	0.0007	AA	0.00010
6/27/2005	<	3.7	<	6	<	9	0.70	<	0.00006	<	0.0008	AA	0.00009
Total	<	49.1	<	80	<	121	11.95	<	0.00255	<	0.0266	AA	0.00425
Average	<	3.8	<	6	<	9	0.92	<	0.00020	<	0.0020	AA	0.00033
Maximum	<	5.0		9	<	10	1.43	<	0.00087	<	0.0062	AA	0.00145
Minimum	<	2.6	<	5	<	9	0.50	<	0.00006	<	0.0007	AA	0.00009

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
'011060105	<	0.222	<	0.219	<	0.173	<	0.219

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically has no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

Outfall 002 was valved off at the end of June for maintenence work on its effluent control system. There was flow for a few hours during the last week included in this report, but due to the very limited amount of flow the weekly loadings round off to zero.

Outfall 005 had two discharge events within the week of April 4. Both events were sampled for both the usual weekly parameters and transuranic parameters. Nothing was detected except trace levels of uranium. The concentrations presented in this report are the higher from both sets of samples.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/4/2005	< 4.2	< 6.5	< 9.0	0.48	0.058	< 0.23	< 0.31	0.017
7/11/2005	< 4.2	< 6.5	< 9.0	0.32	0.019	< 0.11	< 0.16	0.006
7/18/2005	< 2.5	< 5.2	< 8.9	0.29	0.032	< 0.17	< 0.29	0.010
7/25/2005	< 5.4	< 5.9	< 9.1	0.33	0.029	< 0.15	< 0.24	0.009
8/1/2005	< 5.0	< 5.9	< 9.5	0.43	0.027	< 0.11	< 0.17	0.008
8/8/2005	< 3.8	< 7.6	< 9.6	0.32	0.028	< 0.19	< 0.24	0.008
8/15/2005	< 2.4	< 5.6	< 9.0	0.29	0.029	< 0.16	< 0.26	0.009
8/22/2005	< 4.7	< 5.6	< 9.5	0.28	0.024	< 0.14	< 0.24	0.007
8/29/2005	< 6.2	< 6.8	< 9.4	0.30	0.031	< 0.21	< 0.29	0.009
9/5/2005	< 6.1	< 6.8	< 9.5	1.06	0.078	< 0.15	< 0.20	0.023
9/12/2005	< 3.8	< 6.1	< 9.2	0.32	0.014	< 0.08	< 0.12	0.004
9/19/2005	< 4.7	< 5.5	< 9.3	0.20	0.015	< 0.12	< 0.20	0.004
9/26/2005	< 2.6	< 5.2	< 9.7	0.29	0.025	< 0.13	< 0.24	0.007
Total	< 55.6	< 79.2	< 120.7	4.91	0.409	< 1.95	< 2.96	0.119
Average	< 4.3	< 6.1	< 9.3	0.38	0.031	< 0.15	< 0.23	0.009
Maximum	< 6.2	< 7.6	< 9.7	1.06	0.078	< 0.23	< 0.31	0.023
Minimum	< 2.4	< 5.2	< 8.9	0.20	0.014	< 0.08	< 0.12	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001080205	< 0.060	< 0.210	< 0.180	< 0.209

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
7/4/2005	<	6.3	<	6.9	<	9.0	0.68		0.007	<	0.122	AA	0.0119
7/11/2005	<	6.2	<	6.9	<	9.0	0.62		0.003	<	0.059	AA	0.0053
7/18/2005		10.6		9.6	<	9.0	0.66		0.147		0.133	AA	0.0091
7/25/2005	<	8.0	<	6.4	<	9.1	0.79		0.004	<	0.056	AA	0.0069
8/1/2005	<	7.3	<	6.3	<	9.5	0.62		0.003	<	0.043	AA	0.0042
8/8/2005	<	5.3	<	8.2	<	9.6	0.72		0.003	<	0.062	AA	0.0054
8/15/2005		3.8	<	6.0	<	9.0	0.81		0.027	<	0.043	AA	0.0058
8/22/2005	<	6.6	<	6.0	<	9.5	0.69		0.003	<	0.041	AA	0.0048
8/29/2005	<	8.5	<	7.2	<	9.5	0.78		0.005	<	0.070	AA	0.0076
9/5/2005	<	8.1	<	7.2	<	9.4	0.62		0.006	<	0.106	AA	0.0092
9/12/2005		8.9	<	6.5	<	9.2	0.85		0.058	<	0.042	AA	0.0056
9/19/2005	<	6.6	<	5.9	<	9.3	0.64		0.003	<	0.042	AA	0.0045
9/26/2005	<	3.6	<	5.6	<	9.7	0.66		0.004	<	0.053	AA	0.0063
Total	<	89.8	<	88.7	<	120.8	9.14		0.273	<	0.872	AA	0.0866
Average	<	6.9	<	6.8	<	9.3	0.70		0.021	<	0.067	AA	0.0067
Maximum		10.6		9.6	<	9.7	0.85		0.147		0.133	AA	0.0119
Minimum	<	3.6	<	5.6	<	9.0	0.62		0.003	<	0.041	AA	0.0042

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002080205	< 0.209	< 0.320	< 0.179	< 0.226

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/4/2005	16.3	147	202	12.1	0.13	1.16	1.59	0.095
7/11/2005	15.4	115	165	6.5	0.10	0.74	1.06	0.042
7/18/2005	7.2	100	139	3.4	0.06	0.84	1.17	0.029
7/25/2005	28.2	112	157	16.4	0.22	0.87	1.22	0.128
8/1/2005	18.9	12	141	11.5	0.13	0.08	1.00	0.082
8/8/2005	7.6	127	187	3.7	0.07	1.10	1.61	0.032
8/15/2005	13.6	113	172	8.1	0.12	1.01	1.53	0.072
8/22/2005	6.7	90	162	3.5	0.06	0.76	1.37	0.029
8/29/2005	16.9	108	165	5.3	0.18	1.12	1.71	0.055
9/5/2005	17.6	91	133	9.8	0.18	0.92	1.36	0.100
9/12/2005	15.8	90	157	9.1	0.13	0.71	1.25	0.072
9/19/2005	15.8	107	156	8.1	0.13	0.89	1.30	0.068
9/26/2005	11.1	106	142	5.8	0.10	0.99	1.32	0.053
Total	191.1	1317	2078	103.2	1.60	11.18	17.49	0.857
Average	14.7	101	160	7.9	0.12	0.86	1.35	0.066
Maximum	28.2	147	202	16.4	0.22	1.16	1.71	0.128
Minimum	6.7	12	133	3.4	0.06	0.08	1.00	0.029

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003080305	< 0.242	< 0.195	< 0.154	< 0.154

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/4/2005	<	4.6	11	<	9	0.97	0.0050	0.09	AA	0.008
7/11/2005	<	2.7	15	<	9	0.83	0.0070	0.19	AA	0.011
7/18/2005	<	2.7	15	<	9	0.83	0.0080	0.23	AA	0.013
7/25/2005	<	5.4	18	<	10	0.70	0.0060	0.27	AA	0.011
8/1/2005	<	5.6	13	<	10	0.71	0.0060	0.20	AA	0.011
8/8/2005	<	4.1	17	<	10	0.62	0.0060	0.27	AA	0.010
8/15/2005	<	2.7	15	<	9	0.73	0.0060	0.22	AA	0.011
8/22/2005	<	5.3	13	<	10	0.70	0.0070	0.21	AA	0.011
8/29/2005	<	5.4	14	<	10	0.72	0.0070	0.22	AA	0.011
9/5/2005	<	7.0	18	<	10	0.88	0.0080	0.26	AA	0.013
9/12/2005	<	4.3	20	<	9	0.74	0.0060	0.26	AA	0.010
9/19/2005	<	5.2	39	<	9	0.71	0.0050	0.47	AA	0.009
9/26/2005	<	3.0	16	<	10	0.82	0.0070	0.21	AA	0.011
Total	<	58.0	223	<	121	9.96	0.0840	3.10	AA	0.138
Average	<	4.5	17	<	9	0.77	0.0065	0.24	AA	0.011
Maximum	<	7.0	39	<	10	0.97	0.0080	0.47	AA	0.013
Minimum	<	2.7	11	<	9	0.62	0.0050	0.09	AA	0.008

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004080205	< 0.059	< 0.202	< 0.059	< 0.234

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/4/2005	AL	AL	AL	AL	AL	AL	AL	AL
7/11/2005	AL	AL	AL	AL	AL	AL	AL	AL
7/18/2005	AL	AL	AL	AL	AL	AL	AL	AL
7/25/2005	AL	AL	AL	AL	AL	AL	AL	AL
8/1/2005	AL	AL	AL	AL	AL	AL	AL	AL
8/8/2005	AL	AL	AL	AL	AL	AL	AL	AL
8/15/2005	AL	AL	AL	AL	AL	AL	AL	AL
8/22/2005	AL	AL	AL	AL	AL	AL	AL	AL
8/29/2005	AL	AL	AL	AL	AL	AL	AL	AL
9/5/2005	AL	AL	AL	AL	AL	AL	AL	AL
9/12/2005	AL	AL	AL	AL	AL	AL	AL	AL
9/19/2005	AL	AL	AL	AL	AL	AL	AL	AL
9/26/2005	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
No Flow	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/4/2005	<	4.3	<	6.5	<	9.0	2.66	0.010	<	0.041	AA	0.017
7/11/2005		4.2	<	5.3	<	9.0	3.63	0.026	<	0.033	AA	0.023
7/18/2005		4.4	<	5.3	<	8.9	3.17	0.061	<	0.072	AA	0.044
7/25/2005	<	5.0	<	5.9	<	9.5	3.84	0.018	<	0.046	AA	0.030
8/1/2005	<	5.7	<	6.0	<	9.5	3.95	0.016	<	0.040	AA	0.026
8/8/2005	<	3.9	<	7.7	<	9.6	3.97	0.018	<	0.057	AA	0.030
8/15/2005		6.1		9.1	<	9.0	3.46	0.043		0.064	AA	0.024
8/22/2005		5.4	<	5.7	<	9.6	4.43	0.028	<	0.029	AA	0.023
8/29/2005	<	4.9	<	5.7	<	9.6	3.96	0.019	<	0.044	AA	0.031
9/5/2005	<	6.3	<	6.9	<	9.5	5.11	0.037	<	0.083	AA	0.062
9/12/2005		4.0	<	6.1	<	9.2	5.86	0.016	<	0.024	AA	0.024
9/19/2005	<	4.9	<	5.6	<	9.3	4.63	0.016	<	0.032	AA	0.026
9/26/2005		16.7		6.8	<	9.7	4.09	0.126		0.052	AA	0.031
Total	<	75.8	<	82.6	<	121.4	52.76	0.434	<	0.617	AA	0.389
Average	<	5.8	<	6.4	<	9.3	4.06	0.033	<	0.047	AA	0.030
Maximum		16.7		9.1	<	9.7	5.86	0.126	<	0.083	AA	0.062
Minimum	<	3.9	<	5.3	<	8.9	2.66	0.010	<	0.024	AA	0.017

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009080205	< 0.058	< 0.183	< 0.144	< 0.182

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
7/4/2005		12.2	<	6.5	<	9.3	1.87		0.096	<	0.051	AA	0.015
7/11/2005		4.4	<	5.3	<	8.9	1.59		0.021	<	0.026	AA	0.008
7/18/2005		3.9		5.5	<	9.0	1.48		0.028		0.040	AA	0.011
7/25/2005	<	5.1		6.8	<	9.5	2.30		0.008		0.040	AA	0.014
8/1/2005	<	6.0	<	6.1	<	9.5	1.56		0.004	<	0.028	AA	0.007
8/8/2005	<	4.0	<	7.7	<	9.5	1.10		0.003	<	0.038	AA	0.005
8/15/2005	<	2.6	<	5.7	<	9.1	1.63		0.006	<	0.032	AA	0.009
8/22/2005		7.2		6.5	<	9.5	1.28		0.034		0.031	AA	0.006
8/29/2005	<	5.2		7.6	<	9.5	1.20		0.004		0.045	AA	0.007
9/5/2005	<	6.7	<	6.9	<	9.6	4.11		0.019	<	0.054	AA	0.032
9/12/2005	<	4.2	<	6.2	<	9.2	1.85		0.005	<	0.029	AA	0.009
9/19/2005	<	5.0	<	5.6	<	9.3	1.14		0.003	<	0.028	AA	0.006
9/26/2005	<	2.8	<	5.3	<	9.7	1.77		0.007	<	0.033	AA	0.011
Total	<	69.3	<	81.7	<	121.6	22.88		0.238	<	0.475	AA	0.139
Average	<	5.3	<	6.3	<	9.4	1.76		0.018	<	0.037	AA	0.011
Maximum		12.2	<	7.7	<	9.7	4.11		0.096	<	0.054	AA	0.032
Minimum	<	2.6	<	5.3	<	8.9	1.10		0.003	<	0.026	AA	0.005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010080205	< 0.169	< 0.1625	< 0.060	< 0.060

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
7/4/2005	<	4.4	<	6.5	<	9.0	0.62		0.0001	<	0.0010	AA	0.0001
7/11/2005	<	2.7	<	5.3	<	8.9	0.73		0.0001	<	0.0010	AA	0.0001
7/18/2005	<	2.6		5.4	<	9.0	0.57		0.0001		0.0010	AA	0.0001
7/25/2005	<	5.1	<	5.9	<	9.5	0.77		0.0003	<	0.0040	AA	0.0005
8/1/2005	<	5.9	<	6.1	<	9.5	0.73		0.0001	<	0.0010	AA	0.0001
8/8/2005		11.6		10.5	<	9.6	0.63		0.0010		0.0010	AA	0.0001
8/15/2005	<	2.6		5.8	<	9.0	0.62		0.0000		0.0010	AA	0.0001
8/22/2005	<	5.2	<	5.7	<	9.5	0.76		0.0000	<	0.0000	AA	0.0001
8/29/2005	<	5.2	<	5.7	<	9.5	0.78		0.0001	<	0.0010	AA	0.0001
9/5/2005	<	6.5	<	6.9	<	9.5	0.92		0.0003	<	0.0040	AA	0.0005
9/12/2005	<	4.2	<	6.2	<	9.2	1.10		0.0000	<	0.0000	AA	0.0000
9/19/2005	<	5.1		5.6	<	9.3	0.83		0.0000		0.0000	AA	0.0001
9/26/2005	<	2.7	<	5.3	<	9.7	0.57		0.0000	<	0.0000	AA	0.0000
Total	<	63.8	<	80.9	<	121.2	9.63		0.0021	<	0.0150	AA	0.0019
Average	<	4.9	<	6.2	<	9.3	0.74		0.0002	<	0.0012	AA	0.0001
Maximum		11.6		10.5	<	9.7	1.10		0.0010	<	0.0040	AA	0.0005
Minimum	<	2.6	<	5.3	<	8.9	0.57		0.0000	<	0.0000	AA	0.0000

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
'011080205	<	0.173	<	0.061	<	0.061	<	0.061

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Gross Alpha Activity is used as a surrogate for Uranium Alpha Activity. If Gross Alpha Activity is measurable in an effluent sample, the Alpha Activity loading is calculated assuming that all the Gross Alpha Activity is due to uranium. If the Gross Alpha Activity is not measurable, the Alpha Activity loading is calculated based on the measured uranium concentration.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected. Alpha Activity loadings are calculated from the measured uranium concentrations if Gross Alpha Activity is not detectable.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
10/3/2005	<	3.3	<	6	<	9		0.28		0.022	<	0.13	<	0.20		0.006
10/10/2005	<	5.2	<	6	<	9		0.27		0.022	<	0.13	<	0.21		0.006
10/17/2005	<	5.1		7	<	9		0.25		0.019		0.15	<	0.19		0.005
10/24/2005	<	3.2		6	<	9		0.61		0.063		0.17	<	0.27		0.019
10/31/2005	<	5.8		6	<	9		0.70		0.069		0.17	<	0.27		0.020
11/7/2005	<	3.3		8	<	9		0.42		0.031		0.17	<	0.20		0.009
11/14/2005		7.0		22	<	9		0.56		0.171		0.54	<	0.23		0.014
11/21/2005		4.9		10		9		1.14		0.115		0.23		0.21		0.027
11/28/2005	<	3.3		8	<	9		0.39		0.024		0.15	<	0.16		0.007
12/5/2005		4.9		7	<	9		5.80		0.124		0.19	<	0.23		0.148
12/12/2005	<	3.3	<	7	<	9		0.82		0.052	<	0.14	<	0.17		0.015
12/19/2005	<	3.5		6	<	9		1.57		0.083		0.14	<	0.21		0.038
12/26/2005	<	3.3		6	<	9		0.74		0.059		0.13	<	0.21		0.017
Total	<	56.1	<	103	<	116		13.55		0.854	<	2.42	<	2.75		0.332
Average	<	4.3	<	8	<	9		1.04		0.066	<	0.19	<	0.21		0.026
Maximum		7.0		22		9		5.80		0.171		0.54	<	0.27		0.148
Minimum	<	3.2	<	6	<	9		0.25		0.019	<	0.13	<	0.16		0.005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001120105	< 0.183	< 0.193	< 0.071	< 0.193

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/3/2005	< 4.6	< 6	< 9	0.66	0.003	< 0.043	AA	0.005
10/10/2005	< 7.3	9	< 9	0.63	0.003	0.083	AA	0.006
10/17/2005	< 7.3	< 6	< 9	0.68	0.002	< 0.034	AA	0.004
10/24/2005	8.8	6	< 9	0.85	0.111	0.077	AA	0.011
10/31/2005	< 8.6	< 6	< 9	0.68	0.003	< 0.053	AA	0.006
11/7/2005	15.3	9	< 9	0.74	0.121	0.069	AA	0.006
11/14/2005	18.5	10	< 9	0.78	0.208	0.111	AA	0.009
11/21/2005	< 4.7	< 8	< 9	0.69	0.005	< 0.094	AA	0.008
11/28/2005	< 4.7	6	< 9	0.66	0.003	0.045	AA	0.005
12/5/2005	< 4.5	< 8	< 9	0.60	0.004	< 0.081	AA	0.006
12/12/2005	4.5	12	< 9	0.64	0.033	0.091	AA	0.005
12/19/2005	< 5.0	6	< 9	0.89	0.008	0.090	AA	0.013
12/26/2005	< 5.2	6	< 9	1.02	0.007	0.066	AA	0.011
Total	< 99.0	< 98	< 117	9.52	0.511	< 0.937	AA	0.094
Average	< 7.6	< 8	< 9	0.73	0.039	< 0.072	AA	0.007
Maximum	18.5	12	< 9	1.02	0.208	0.111	AA	0.013
Minimum	< 4.5	< 6	< 9	0.60	0.002	< 0.034	AA	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002120105	< 0.074	< 0.123	< 0.226	< 0.226

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/3/2005	21.6	100	160	7.09	0.167	0.77	1.24	0.055
10/10/2005	20.7	112	168	10.6	0.178	0.97	1.45	0.091
10/17/2005	17.2	137	166	6.74	0.129	1.03	1.25	0.051
10/24/2005	17.2	123	192	8.22	0.155	1.11	1.73	0.074
10/31/2005	38.9	125	169	18.5	0.337	1.08	1.47	0.160
11/7/2005	37.4	119	165	17.5	0.318	1.01	1.40	0.149
11/14/2005	24.0	123	181	11.8	0.212	1.09	1.60	0.104
11/21/2005	22.0	140	187	11.6	0.197	1.25	1.67	0.104
11/28/2005	18.8	142	194	6.37	0.150	1.13	1.55	0.051
12/5/2005	21.6	152	184	8.83	0.202	1.42	1.72	0.083
12/12/2005	17.3	117	179	8.67	0.159	1.07	1.64	0.079
12/19/2005	30.5	125	171	16.1	0.295	1.21	1.65	0.156
12/26/2005	17.0	129	182	13.20	0.150	1.14	1.61	0.116
Total	304.2	1,644	2,298	145.2	2.649	14.28	19.96	1.273
Average	23.4	126	177	11.2	0.204	1.10	1.54	0.098
Maximum	38.9	152	194	18.5	0.337	1.42	1.73	0.160
Minimum	17.0	100	160	6.37	0.129	0.77	1.24	0.051

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003120105	< 0.230	< 0.340	< 0.240	< 0.190

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations								Loadings			
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/3/2005	<	3.8		18	<	9	0.94	0.0160	0.520	AA	0.0274
10/10/2005	<	3.7		17	<	9	0.72	0.0090	0.355	AA	0.0153
10/17/2005	<	5.6		20	<	9	0.79	0.0100	0.438	AA	0.0169
10/24/2005	<	3.5		19	<	9	2.19	0.0410	0.593	AA	0.0691
10/31/2005		8.1		19	<	9	0.67	0.2300	0.544	AA	0.0189
11/7/2005	<	6.4		12	<	9	0.36	0.0020	0.121	AA	0.0037
11/14/2005	<	3.6		15	<	9	0.27	0.0000	0.039	AA	0.0007
11/21/2005	<	3.7		16	<	9	0.60	0.0020	0.069	AA	0.0026
11/28/2005	<	3.7		23	<	9	0.63	0.0020	0.117	AA	0.0032
12/5/2005	<	3.6		23	<	9	0.34	0.0000	0.021	AA	0.0003
12/12/2005	<	3.1		17	<	9	0.71	0.0020	0.065	AA	0.0028
12/19/2005	<	3.7		19	<	9	0.79	0.0020	0.085	AA	0.0036
12/26/2005	<	3.7		21	<	9	0.64	0.0000	0.012	AA	0.0003
Total	<	56.2	<	237	<	117	9.65	0.3160	2.979	AA	0.1648
Average	<	4.3	<	18	<	9	0.74	0.0243	0.229	AA	0.0127
Maximum		8.1		23	<	9	2.19	0.2300	0.593	AA	0.0691
Minimum	<	3.1	<	12	<	9	0.27	0.0000	0.012	AA	0.0003

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004120805	< 0.072	< 0.175	< 0.221	< 0.175

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/3/2005	AL	AL	AL	AL	AL	AL	AL	AL
10/10/2005	AL	AL	AL	AL	AL	AL	AL	AL
10/17/2005	AL	AL	AL	AL	AL	AL	AL	AL
10/24/2005	AL	AL	AL	AL	AL	AL	AL	AL
10/31/2005	AL	AL	AL	AL	AL	AL	AL	AL
11/7/2005	AL	AL	AL	AL	AL	AL	AL	AL
11/14/2005	AL	AL	AL	AL	AL	AL	AL	AL
11/21/2005	AL	AL	AL	AL	AL	AL	AL	AL
11/28/2005	AL	AL	AL	AL	AL	AL	AL	AL
12/5/2005	AL	AL	AL	AL	AL	AL	AL	AL
12/12/2005	AL	AL	AL	AL	AL	AL	AL	AL
12/19/2005	AL	AL	AL	AL	AL	AL	AL	AL
12/26/2005	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
No Flow	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/3/2005	4.8	6	< 9	5.28	0.020	0.025	AA	0.022
10/10/2005	< 3.4	7	< 9	4.55	0.016	0.044	AA	0.027
10/17/2005	< 5.2	7	< 9	4.85	0.012	0.029	AA	0.019
10/24/2005	5.9	8	< 9	4.61	0.073	0.101	AA	0.057
10/31/2005	< 6.0	< 6	< 9	6.57	0.026	< 0.039	AA	0.044
11/7/2005	6.5	18	< 9	5.18	0.038	0.102	AA	0.030
11/14/2005	5.3	8	< 9	6.48	0.046	0.071	AA	0.056
11/21/2005	5.6	7	< 9	5.87	0.049	0.064	AA	0.052
11/28/2005	7.9	10	< 9	6.15	0.054	0.067	AA	0.042
12/5/2005	6.7	9	< 9	0.67	0.062	0.082	AA	0.006
12/12/2005	6.5	< 6	< 9	6.49	0.032	< 0.028	AA	0.032
12/19/2005	8.3	9	< 9	8.41	0.090	0.097	AA	0.092
12/26/2005	6.9	< 5	< 9	8.09	0.078	< 0.060	AA	0.091
Total	< 79.0	< 106	< 117	73.20	0.596	< 0.809	AA	0.571
Average	< 6.1	< 8	< 9	5.63	0.046	< 0.062	AA	0.044
Maximum	8.3	18	< 9	8.41	0.090	0.102	AA	0.092
Minimum	< 3.4	< 5	< 9	0.67	0.012	0.025	AA	0.006

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009120105	< 0.302	< 0.318	< 0.079	< 0.194

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/3/2005	<	3.6	<	6	<	9	2.34	0.007	<	0.028	AA	0.012
10/10/2005	<	3.5	<	6	<	9	2.60	0.009	<	0.033	AA	0.016
10/17/2005	<	5.5	<	6	<	9	2.00	0.007	<	0.033	AA	0.012
10/24/2005	<	3.4		12	<	9	2.94	0.018		0.121	AA	0.030
10/31/2005	<	6.5	<	6	<	9	4.75	0.021	<	0.044	AA	0.035
11/7/2005	<	6.4	<	6	<	9	2.27	0.010	<	0.043	AA	0.017
11/14/2005	<	3.5		8	<	9	1.79	0.008		0.063	AA	0.013
11/21/2005	<	3.6		8	<	9	2.69	0.013		0.067	AA	0.022
11/28/2005		4.5		6	<	9	1.36	0.033		0.042	AA	0.010
12/5/2005	<	3.5	<	7	<	9	3.26	0.016	<	0.058	AA	0.026
12/12/2005	<	3.3	<	6	<	9	2.52	0.011	<	0.043	AA	0.019
12/19/2005		4.3	<	5	<	9	4.68	0.040	<	0.048	AA	0.044
12/26/2005	<	3.6	<	5	<	9	3.18	0.020	<	0.054	AA	0.033
Total	<	55.2	<	86	<	117	36.38	0.213	<	0.677	AA	0.289
Average	<	4.2	<	7	<	9	2.80	0.016	<	0.052	AA	0.022
Maximum	<	6.5		12	<	9	4.75	0.040		0.121	AA	0.044
Minimum	<	3.3	<	5	<	9	1.36	0.007	<	0.028	AA	0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010120105	< 0.238	< 0.083	< 0.122	< 0.083

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/3/2005	<	3.4	<	6	<	9	0.78	0.0000	<	0.0000	AA	0.0000
10/10/2005	<	3.6	<	6	<	9	0.73	0.0000	<	0.0000	AA	0.0000
10/17/2005	<	5.5		7	<	9	0.75	0.0000		0.0000	AA	0.0000
10/24/2005	<	3.4	<	5	<	9	0.78	0.0001	<	0.0010	AA	0.0001
10/31/2005	<	6.0	<	6	<	9	1.02	0.0000	<	0.0000	AA	0.0000
11/7/2005	<	6.3	<	6	<	9	0.79	0.0000	<	0.0000	AA	0.0000
11/14/2005	<	3.5		6	<	9	0.77	0.0002		0.0030	AA	0.0003
11/21/2005	<	3.4		5	<	9	0.86	0.0001		0.0010	AA	0.0002
11/28/2005	<	3.5		6	<	9	1.77	0.0003		0.0020	AA	0.0004
12/5/2005		8.8	<	7	<	9	1.03	0.0013	<	0.0010	AA	0.0001
12/12/2005	<	3.3	<	6	<	9	0.98	0.0001	<	0.0010	AA	0.0001
12/19/2005	<	3.7		7	<	9	1.41	0.0003		0.0020	AA	0.0005
12/26/2005	<	3.5	<	5	<	9	1.12	0.0002	<	0.0010	AA	0.0003
Total	<	57.9	<	77	<	117	12.79	0.0025	<	0.0120	AA	0.0020
Average	<	4.5	<	6	<	9	0.98	0.0002	<	0.0009	AA	0.0002
Maximum		8.8		7	<	9	1.77	0.0013		0.0030	AA	0.0005
Minimum	<	3.3	<	5	<	9	0.73	0.0000	<	0.0000	AA	0.0000

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011120105	< 0.259	< 0.064	< 0.094	< 0.173

Plant Radiological Discharges to Surface Water
Calendar Year 2005 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

Due to the reduced plant heat load and maintenance work on the Cooling Water System, the Cooling Tower Blowdown (Outfall 004) has been intermittently valved off this quarter. This has resulted in several weeks with very low total flow and, consequently, very low loadings.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi		Tc mCi	U kg
1/2/2006		3.9	11	<	9	1.37	0.112	0.31	<	0.26	0.040
1/9/2006		3.6	19		10	1.42	0.062	0.32		0.17	0.025
1/16/2006	<	4.9	6	<	9	1.06	0.095	0.17	<	0.24	0.028
1/23/2006		3.5	20		29	1.41	0.126	0.70		1.03	0.050
1/30/2006	<	3.8	31		57	2.10	0.051	0.42		0.76	0.028
2/6/2006	<	4.0	23		22	0.98	0.069	0.47		0.46	0.020
2/13/2006		10.6	106		25	0.91	0.161	1.61		0.38	0.014
2/20/2006	<	3.2	15	<	9	0.88	0.030	0.15	<	0.09	0.009
2/27/2006		4.1	12	<	9	0.75	0.050	0.14	<	0.11	0.009
3/6/2006	<	0.9	12	<	9	0.47	0.016	0.20	<	0.15	0.008
3/13/2006	<	3.3	9	<	9	0.79	0.111	0.35	<	0.37	0.032
3/20/2006	<	4.8	25		20	1.14	0.082	0.53		0.42	0.024
3/27/2006	<	2.5	7	<	9	0.94	0.041	0.11	<	0.15	0.015
Total	<	53.1	294	<	227	14.22	1.006	5.46	<	4.61	0.302
Average	<	4.1	23	<	17	1.09	0.077	0.42	<	0.35	0.023
Maximum		10.6	106		57	2.10	0.161	1.61		1.03	0.050
Minimum	<	0.9	6	<	9	0.47	0.016	0.11	<	0.09	0.008

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001030106	< 0.051	< 0.056	< 0.056	< 0.021

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/2/2006	<	5.3		8	<	9	0.98	0.011		0.147	AA	0.019
1/9/2006	<	4.9		9	<	9	0.99	0.008		0.122	AA	0.014
1/16/2006	<	7.4		8	<	9	0.93	0.007		0.097	AA	0.012
1/23/2006	<	4.5	<	6	<	9	0.95	0.017	<	0.171	AA	0.029
1/30/2006	<	4.9	<	6	<	9	5.82	0.054	<	0.090	AA	0.090
2/6/2006	<	5.6		8	<	9	0.85	0.009		0.137	AA	0.015
2/13/2006	<	5.8		22	<	9	0.89	0.004		0.160	AA	0.006
2/20/2006	<	4.9	<	6	<	9	1.56	0.007	<	0.046	AA	0.012
2/27/2006	<	5.3		6	<	10	1.02	0.004		0.038	AA	0.006
3/6/2006	<	1.7		8	<	9	0.90	0.002		0.033	AA	0.004
3/13/2006	<	5.8		6	<	9	0.96	0.009		0.096	AA	0.016
3/20/2006	<	6.5	<	5	<	10	0.74	0.009	<	0.113	AA	0.015
3/27/2006	<	3.5	<	5	<	9	0.91	0.007	<	0.068	AA	0.012
Total	<	66.1	<	102	<	118	17.50	0.148	<	1.318	AA	0.250
Average	<	5.1	<	8	<	9	1.35	0.011	<	0.101	AA	0.019
Maximum	<	7.4		22	<	10	5.82	0.054	<	0.171	AA	0.090
Minimum	<	1.7	<	5	<	9	0.74	0.002		0.033	AA	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002030706	< 0.020	< 0.018	< 0.062	< 0.062

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

		Concentrations				Loadings			
		Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/2/2006		11.6	112	156	8.41	0.106	1.02	1.42	0.077
1/9/2006		35.2	121	176	19.4	0.335	1.15	1.67	0.184
1/16/2006		28.1	138	164	15.4	0.257	1.26	1.50	0.141
1/23/2006		36.2	117	161	20.3	0.406	1.31	1.81	0.228
1/30/2006		22.4	130	169	11.5	0.205	1.19	1.55	0.105
2/6/2006		17.5	106	148	13.5	0.136	0.83	1.15	0.105
2/13/2006	<	5.3	9	170	10.3	0.038	0.07	1.20	0.073
2/20/2006		92.5	126	151	36.6	0.630	0.86	1.03	0.249
2/27/2006		72.2	133	169	33.5	0.468	0.86	1.10	0.217
3/6/2006		41.0	130	153	15.9	0.256	0.81	0.95	0.099
3/13/2006		51.5	104	125	24.8	0.422	0.85	1.02	0.203
3/20/2006		58.5	49	48	22.4	0.435	0.36	0.36	0.166
3/27/2006		29.6	25	20	11.2	0.218	0.18	0.14	0.083
Total	<	501.6	1,300	1,810	243.2	3.912	10.75	14.90	1.930
Average	<	38.6	100	139	18.7	0.301	0.83	1.15	0.148
Maximum		92.5	138	176	36.6	0.630	1.31	1.81	0.249
Minimum	<	5.3	9	20	8.41	0.038	0.07	0.14	0.073

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003030806	< 0.019	< 0.081	< 0.055	< 0.090

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/2/2006		4.4	18	<	9	0.53	0.0000	0.000	AA	0.0000
1/9/2006	<	3.7	21	<	9	0.69	0.0014	0.071	AA	0.0023
1/16/2006	<	5.6	17	<	9	0.50	0.0002	0.010	AA	0.0003
1/23/2006		4.4	16	<	9	0.74	0.0209	0.077	AA	0.0035
1/30/2006	<	4.4	17	<	9	0.70	0.0020	0.080	AA	0.0033
2/6/2006	<	4.6	25	<	9	0.43	0.0002	0.014	AA	0.0002
2/13/2006		AL	AL		AL	AL	AL	AL	AL	AL
2/20/2006	<	3.8	14	<	9	0.65	0.0014	0.048	AA	0.0023
2/27/2006	<	3.7	17	<	9	0.62	0.0007	0.030	AA	0.0011
3/6/2006		3.4	24	<	9	0.54	0.0055	0.038	AA	0.0009
3/13/2006		AL	AL		AL	AL	AL	AL	AL	AL
3/20/2006	<	5.5	18	<	9	0.66	0.0012	0.055	AA	0.0021
3/27/2006	<	3.0	19	<	9	0.62	0.0014	0.073	AA	0.0024
Total	<	46.5	206	<	99	6.68	0.0347	0.497	AA	0.0183
Average	<	4.2	19	<	9	0.61	0.0032	0.045	AA	0.0017
Maximum	<	5.6	25	<	9	0.74	0.0209	0.080	AA	0.0035
Minimum	<	3.0	14	<	9	0.43	0.0000	0.000	AA	0.0000

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004030206	< 0.027	< 0.051	< 0.021	< 0.083

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/2/2006	AL	AL	AL	AL	AL	AL	AL	AL
1/9/2006	AL	AL	AL	AL	AL	AL	AL	AL
1/16/2006	AL	AL	AL	AL	AL	AL	AL	AL
1/23/2006	AL	AL	AL	AL	AL	AL	AL	AL
1/30/2006	AL	AL	AL	AL	AL	AL	AL	AL
2/6/2006	AL	AL	AL	AL	AL	AL	AL	AL
2/13/2006	AL	AL	AL	AL	AL	AL	AL	AL
2/20/2006	AL	AL	AL	AL	AL	AL	AL	AL
2/27/2006	AL	AL	AL	AL	AL	AL	AL	AL
3/6/2006	AL	AL	AL	AL	AL	AL	AL	AL
3/13/2006	AL	AL	AL	AL	AL	AL	AL	AL
3/20/2006	AL	AL	AL	AL	AL	AL	AL	AL
3/27/2006	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/2/2006		9.5		5	<	9	7.52	0.148		0.084	AA	0.117
1/9/2006		8.5		9	<	9	7.72	0.059		0.058	AA	0.053
1/16/2006		6.6		8	<	9	7.72	0.074		0.091	AA	0.086
1/23/2006		6.2		7	<	9	7.46	0.119		0.126	AA	0.142
1/30/2006		5.1	<	6	<	9	6.03	0.032	<	0.035	AA	0.037
2/6/2006		7.3		8	<	9	6.74	0.094		0.098	AA	0.087
2/13/2006		7.8		10	<	9	7.99	0.045		0.054	AA	0.046
2/20/2006		6.5	<	6	<	9	7.37	0.040	<	0.035	AA	0.046
2/27/2006		6.2	<	5	<	9	7.33	0.028	<	0.024	AA	0.033
3/6/2006		4.5		8	<	9	4.71	0.022		0.037	AA	0.023
3/13/2006		5.2	<	5	<	9	5.11	0.111	<	0.110	AA	0.110
3/20/2006	<	5.0	<	5	<	10	6.08	0.028	<	0.039	AA	0.046
3/27/2006	<	2.9	<	5	<	9	6.46	0.029	<	0.051	AA	0.064
Total	<	81.3	<	86	<	118	88.24	0.829	<	0.842	AA	0.891
Average	<	6.3	<	7	<	9	6.79	0.064	<	0.065	AA	0.069
Maximum		9.5		10	<	10	7.99	0.148		0.126	AA	0.142
Minimum	<	2.9	<	5	<	9	4.71	0.022	<	0.024	AA	0.023

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009030806	< 0.051	< 0.094	< 0.066	< 0.066

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/2/2006	< 3.9	7	< 9	4.16	0.027	0.077	AA	0.045
1/9/2006	5.2	7	< 9	3.48	0.042	0.059	AA	0.028
1/16/2006	< 5.5	< 5	< 9	2.82	0.017	0.052	AA	0.028
1/23/2006	4.0	< 5	< 9	4.28	0.051	0.068	AA	0.055
1/30/2006	5.2	< 6	< 9	3.87	0.042	0.047	AA	0.032
2/6/2006	< 4.4	11	< 9	2.86	0.018	0.114	AA	0.031
2/13/2006	< 4.7	8	< 9	2.40	0.011	0.056	AA	0.018
2/20/2006	< 3.5	< 6	< 9	2.19	0.010	0.044	AA	0.017
2/27/2006	5.2	< 5	< 9	1.75	0.036	0.037	AA	0.012
3/6/2006	< 1.1	6	< 9	1.10	0.005	0.043	AA	0.008
3/13/2006	< 3.5	7	< 9	1.98	0.015	0.088	AA	0.025
3/20/2006	< 4.9	< 5	< 9	2.22	0.017	0.068	AA	0.029
3/27/2006	3.6	< 5	< 9	2.91	0.037	0.054	AA	0.030
Total	< 54.7	< 84	< 117	36.02	0.328	0.807	AA	0.356
Average	< 4.2	< 6	< 9	2.77	0.025	0.062	AA	0.027
Maximum	5.5	11	< 9	4.28	0.051	0.114	AA	0.055
Minimum	< 1.1	< 5	< 9	1.10	0.005	0.037	AA	0.008

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010030806	< 0.053	< 0.098	< 0.060	< 0.048

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi		Beta mCi	Tc mCi	U kg
1/2/2006	<	3.6	<	5	<	9	1.42		0.0005	<	0.0030	AA	0.0008
1/9/2006	<	3.7		10	<	9	1.46		0.0001		0.0014	AA	0.0002
1/16/2006	<	5.4	<	5	<	9	1.28		0.0003	<	0.0020	AA	0.0005
1/23/2006	<	3.5	<	5	<	9	1.29		0.0011	<	0.0073	AA	0.0018
1/30/2006	<	4.3	<	6	<	9	1.33		0.0001	<	0.0010	AA	0.0002
2/6/2006	<	4.5		8	<	9	1.12		0.0003		0.0034	AA	0.0005
2/13/2006	<	4.8	<	7	<	9	1.16		0.0001	<	0.0009	AA	0.0002
2/20/2006	<	3.5	<	6	<	9	1.15		0.0001	<	0.0009	AA	0.0002
2/27/2006		4.2	<	5	<	9	1.34		0.0006	<	0.0008	AA	0.0002
3/6/2006		2.8		11	<	9	0.82		0.0004		0.0016	AA	0.0001
3/13/2006	<	3.1		7	<	9	0.80		0.0006		0.0089	AA	0.0011
3/20/2006	<	5.3	<	5	<	9	1.41		0.0001	<	0.0006	AA	0.0002
3/27/2006	<	2.8	<	5	<	9	1.17		0.0001	<	0.0005	AA	0.0001
Total	<	51.5	<	85	<	117	15.75		0.0044	<	0.0323	AA	0.0061
Average	<	4.0	<	7	<	9	1.21		0.0003	<	0.0025	AA	0.0005
Maximum	<	5.4		11	<	9	1.46		0.0011	<	0.0089	AA	0.0018
Minimum	<	2.8	<	5	<	9	0.80		0.0001	<	0.0005	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011030806	< 0.055	< 0.093	< 0.083	< 0.101

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi		Tc mCi	U kg
4/3/2006	<	3.4		11	<	10	1.00	0.111		0.36	<	0.32	0.033
4/10/2006	<	4.0		18		23	1.06	0.116		0.56		0.72	0.034
4/17/2006	<	3.1		10	<	10	0.67	0.108		0.46	<	0.45	0.032
4/24/2006	<	4.6		8		12	0.78	0.079		0.22		0.37	0.023
5/1/2006	<	5.5		8	<	9	0.36	0.043		0.27	<	0.31	0.013
5/8/2006	<	4.0	<	7	<	9	0.52	0.042	<	0.17	<	0.21	0.012
5/15/2006		3.4		7	<	9	0.41	0.066		0.13	<	0.17	0.008
5/22/2006		3.8		8	<	10	0.55	0.090		0.19	<	0.22	0.013
5/29/2006	<	3.6	<	6	<	9	0.46	0.051	<	0.20	<	0.29	0.015
6/5/2006	<	4.0	<	8	<	9	0.34	0.036	<	0.24	<	0.28	0.011
6/12/2006	<	4.4	<	5	<	9	0.22	0.016	<	0.12	<	0.19	0.005
6/19/2006	<	5.4	<	7	<	9	0.25	0.015	<	0.13	<	0.16	0.004
6/26/2006	<	4.9	<	5	<	9	0.42	0.041	<	0.15	<	0.25	0.012
Total	<	54.1	<	107	<	134	7.04	0.814	<	3.20	<	3.93	0.214
Average	<	4.2	<	8	<	10	0.54	0.063	<	0.25	<	0.30	0.016
Maximum	<	5.5		18		23	1.06	0.116		0.56		0.72	0.034
Minimum	<	3.1	<	5	<	9	0.22	0.015	<	0.12	<	0.16	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001060106	< 0.020	< 0.154	< 0.085	< 0.095

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/3/2006	<	5.3	<	8	<	10	0.97	0.006	<	0.072	AA	0.009
4/10/2006	<	6.5	<	6	<	9	0.82	0.010	<	0.115	AA	0.017
4/17/2006	<	4.9	<	6	<	10	0.73	0.008	<	0.103	AA	0.013
4/24/2006	<	7.0	<	7	<	9	0.63	0.007	<	0.126	AA	0.012
5/1/2006	<	8.0	<	6	<	9	0.60	0.005	<	0.080	AA	0.008
5/8/2006	<	5.7	<	8	<	9	0.75	0.005	<	0.076	AA	0.008
5/15/2006	<	4.7		7	<	9	0.78	0.004		0.057	AA	0.007
5/22/2006	<	5.8		5	<	10	0.90	0.004		0.042	AA	0.007
5/29/2006	<	5.9	<	7	<	9	0.87	0.005	<	0.061	AA	0.008
6/5/2006	<	6.5	<	8	<	9	0.86	0.005	<	0.083	AA	0.009
6/12/2006	<	7.1	<	6	<	9	0.90	0.004	<	0.043	AA	0.007
6/19/2006	<	8.7	<	8	<	9	0.98	0.004	<	0.050	AA	0.006
6/26/2006	<	4.9	<	5	<	9	0.89	0.004	<	0.042	AA	0.007
Total	<	81.0	<	85	<	117	10.68	0.071	<	0.950	AA	0.117
Average	<	6.2	<	7	<	9	0.82	0.005	<	0.073	AA	0.009
Maximum	<	8.7	<	8	<	10	0.98	0.010	<	0.126	AA	0.017
Minimum	<	4.7	<	5	<	9	0.60	0.004	<	0.042	AA	0.006

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002060206	< 0.019	< 0.075	< 0.059	< 0.074

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/3/2006	39.3	26	15	19.30	0.291	0.195	0.11	0.143
4/10/2006	28.3	26	18	12.90	0.218	0.199	0.14	0.099
4/17/2006	26.3	25	22	10.10	0.176	0.167	0.15	0.068
4/24/2006	18.3	19	19	11.50	0.125	0.130	0.13	0.079
5/1/2006	23.0	18	18	9.28	0.173	0.137	0.13	0.070
5/8/2006	21.9	71	78	8.39	0.154	0.495	0.55	0.059
5/15/2006	20.4	27	19	6.76	0.163	0.212	0.15	0.054
5/22/2006	21.1	23	18	8.36	0.140	0.155	0.12	0.056
5/29/2006	11.6	67	94	6.77	0.076	0.439	0.61	0.044
6/5/2006	< 5.0	44	53	4.04	0.036	0.316	0.39	0.029
6/12/2006	< 5.6	80	104	4.41	0.038	0.545	0.71	0.030
6/19/2006	< 6.6	81	106	4.96	0.045	0.558	0.73	0.034
6/26/2006	17.3	70	69	5.81	0.143	0.577	0.57	0.048
Total	< 244.7	577	632	112.58	1.778	4.125	4.48	0.813
Average	< 18.8	44	49	8.66	0.137	0.317	0.34	0.063
Maximum	39.3	81	106	19.30	0.291	0.577	0.73	0.143
Minimum	< 5.0	18	15	4.04	0.036	0.130	0.11	0.029

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003060806	< 0.058	< 0.128	< 0.067	< 0.084

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
4/3/2006		AL		AL		AL		AL		AL		AL		AL		AL
4/10/2006	<	4.8		14	<	9		0.59		0.0010		0.036		AA		0.0015
4/17/2006	<	3.8		17	<	10	<	0.10	<	0.0002		0.045		AA	<	0.0003
4/24/2006	<	5.6		14	<	9		0.45		0.0010		0.059		AA		0.0019
5/1/2006	<	7.0		15	<	9		0.31		0.0003		0.021		AA		0.0004
5/8/2006	<	4.8		16	<	9		0.64		0.0050		0.206		AA		0.0081
5/15/2006	<	3.5		16	<	9		0.56		0.0090		0.434		AA		0.0152
5/22/2006	<	4.3		18	<	9		0.67		0.0080		0.364		AA		0.0138
5/29/2006	<	4.0		14	<	9		0.70		0.0080		0.268		AA		0.0139
6/5/2006	<	4.7		16	<	9		0.79		0.0110		0.349		AA		0.0177
6/12/2006	<	5.1		18	<	9		0.70		0.0100		0.426		AA		0.0161
6/19/2006	<	6.0		17	<	9		0.57		0.0080		0.388		AA		0.0130
6/26/2006	<	4.4		14	<	9		0.73		0.0090		0.271		AA		0.0145
Total	<	58.0		188	<	107	<	6.81	<	0.0704		2.867		AA	<	0.1164
Average	<	4.8		16	<	9	<	0.57	<	0.0059		0.239		AA	<	0.0097
Maximum	<	7.0		18	<	10		0.79		0.0110		0.434		AA		0.0177
Minimum	<	3.5		14	<	9	<	0.10	<	0.0002		0.021		AA	<	0.0003

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004060806	< 0.050	< 0.055	< 0.054	< 0.020

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/3/2006	AL	AL	AL	AL	AL	AL	AL	AL
4/10/2006	AL	AL	AL	AL	AL	AL	AL	AL
4/17/2006	AL	AL	AL	AL	AL	AL	AL	AL
4/24/2006	AL	AL	AL	AL	AL	AL	AL	AL
5/1/2006	AL	AL	AL	AL	AL	AL	AL	AL
5/8/2006	AL	AL	AL	AL	AL	AL	AL	AL
5/15/2006	AL	AL	AL	AL	AL	AL	AL	AL
5/22/2006	AL	AL	AL	AL	AL	AL	AL	AL
5/29/2006	AL	AL	AL	AL	AL	AL	AL	AL
6/5/2006	AL	AL	AL	AL	AL	AL	AL	AL
6/12/2006	AL	AL	AL	AL	AL	AL	AL	AL
6/19/2006	AL	AL	AL	AL	AL	AL	AL	AL
6/26/2006	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/3/2006	<	4.0	<	7	<	10	6.79	0.059	<	0.108	AA	0.102
4/10/2006	<	4.3	<	5	<	9	5.28	0.024	<	0.040	AA	0.040
4/17/2006		6.2		6	<	10	0.94	0.085		0.076	AA	0.013
4/24/2006		5.4	<	7	<	9	4.75	0.044	<	0.054	AA	0.039
5/1/2006	<	5.6		7	<	9	3.93	0.016		0.046	AA	0.026
5/8/2006		7.7	<	7	<	9	4.40	0.044	<	0.040	AA	0.025
5/15/2006		3.8	<	5	<	9	4.03	0.020	<	0.029	AA	0.022
5/22/2006	<	3.7		10	<	9	4.81	0.019		0.066	AA	0.032
5/29/2006	<	3.7	<	6	<	9	4.30	0.017	<	0.042	AA	0.028
6/5/2006	<	4.1	<	8	<	9	3.56	0.015	<	0.055	AA	0.026
6/12/2006	<	4.5	<	5	<	9	4.31	0.013	<	0.027	AA	0.022
6/19/2006	<	5.5	<	8	<	9	3.78	0.013	<	0.042	AA	0.021
6/26/2006	<	4.5	<	5	<	9	3.64	0.017	<	0.041	AA	0.029
Total	<	63.0	<	86	<	117	54.52	0.386	<	0.666	AA	0.424
Average	<	4.8	<	7	<	9	4.19	0.030	<	0.051	AA	0.033
Maximum		7.7		10	<	10	6.79	0.085	<	0.108	AA	0.102
Minimum	<	3.7	<	5	<	9	0.94	0.013	<	0.027	AA	0.013

Transuranics		Am 241		Np 237		Pu 238	Pu 239+240
'009060806	<	0.058	<	0.105	<	0.022	0.074

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/3/2006	5.2	9	< 10	3.31	0.071	0.123	AA	0.045
4/10/2006	< 4.3	6	< 9	2.43	0.013	0.056	AA	0.022
4/17/2006	< 3.3	6	< 10	1.62	0.013	0.076	AA	0.022
4/24/2006	< 4.7	< 7	< 9	1.76	0.009	< 0.056	AA	0.015
5/1/2006	< 6.0	< 6	< 9	1.77	0.008	< 0.043	AA	0.013
5/8/2006	< 4.4	< 7	< 9	1.55	0.006	< 0.048	AA	0.010
5/15/2006	< 3.3	7	< 9	1.40	0.006	0.046	AA	0.010
5/22/2006	< 3.8	7	< 9	1.64	0.007	0.049	AA	0.012
5/29/2006	< 3.9	< 6	< 9	1.79	0.008	< 0.048	AA	0.014
6/5/2006	< 4.2	< 8	< 9	1.70	0.008	< 0.062	AA	0.013
6/12/2006	< 4.7	< 5	< 9	1.27	0.005	< 0.036	AA	0.009
6/19/2006	< 5.6	< 8	< 9	1.47	0.006	< 0.052	AA	0.010
6/26/2006	< 5.2	5	< 9	1.97	0.009	0.043	AA	0.016
Total	< 58.6	< 85	< 117	23.68	0.171	< 0.736	AA	0.212
Average	< 4.5	< 7	< 9	1.82	0.013	< 0.057	AA	0.016
Maximum	< 6.0	9	< 10	3.31	0.071	0.123	AA	0.045
Minimum	< 3.3	< 5	< 9	1.27	0.005	< 0.036	AA	0.009

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010060806	< 0.075	< 0.021	< 0.058	< 0.058

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/3/2006	< 3.8	< 7	< 10	1.22	0.00092	< 0.0090	AA	0.0015
4/10/2006	< 4.5	< 5	< 9	1.21	0.00011	< 0.0008	AA	0.0002
4/17/2006	< 3.5	< 6	< 10	0.53	0.00043	< 0.0074	AA	0.0007
4/24/2006	< 5.2	< 7	< 9	0.99	0.00024	< 0.0027	AA	0.0004
5/1/2006	< 5.9	< 6	< 9	0.84	0.00015	< 0.0017	AA	0.0002
5/8/2006	< 4.4	< 7	< 9	0.81	0.00007	< 0.0011	AA	0.0001
5/15/2006	10.4	7	< 9	0.66	0.00158	0.0010	AA	0.0001
5/22/2006	< 3.9	6	< 10	0.78	0.00007	0.0008	AA	0.0001
5/29/2006	< 3.8	< 6	< 9	0.68	0.00018	< 0.0028	AA	0.0003
6/5/2006	< 4.2	< 8	< 9	0.59	0.00026	< 0.0056	AA	0.0004
6/12/2006	< 4.8	< 5	< 9	0.62	0.00005	< 0.0007	AA	0.0001
6/19/2006	< 5.8	< 8	< 9	0.54	0.00004	< 0.0010	AA	0.0001
6/26/2006	< 6.3	< 5	< 9	0.59	0.00021	< 0.0031	AA	0.0003
Total	< 66.5	< 83	< 117	10.06	0.00429	< 0.0377	AA	0.0046
Average	< 5.1	< 6	< 9	0.77	0.00033	< 0.0029	AA	0.0004
Maximum	10.4	< 8	< 10	1.22	0.00158	< 0.0090	AA	0.0015
Minimum	< 3.5	< 5	< 9	0.53	0.00004	< 0.0007	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011060806	< 0.021	< 0.066	< 0.019	< 0.066

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/3/2006												
4/10/2006												
4/17/2006												
4/24/2006												
5/1/2006												
5/8/2006	<	5.0		8	<	9	1.63	0.0019		0.0153	AA	0.0032
5/15/2006	<	6.4	<	6	<	9	1.62	0.0017	<	0.0105	AA	0.0029
5/22/2006	<	6.3	<	6	<	9	1.51	0.0017	<	0.0109	AA	0.0028
5/29/2006	<	6.2	<	6	<	9	1.41	0.0015	<	0.0107	AA	0.0026
6/5/2006		3.8	<	5	<	9	1.20	0.0060	<	0.0082	AA	0.0019
6/12/2006	<	5.2	<	8	<	9	1.20	0.0009	<	0.0106	AA	0.0016
6/19/2006	<	5.4	<	8	<	9	1.33	0.0012	<	0.0121	AA	0.0020
6/26/2006	<	5.2	<	8	<	9	1.21	0.0011	<	0.0116	AA	0.0018
Total	<	43.5	<	55	<	73	11.11	0.0161	<	0.0899	AA	0.0186
Average	<	5.4	<	7	<	9	1.39	0.0020	<	0.0112	AA	0.0023
Maximum	<	6.4		8	<	9	1.63	0.0060		0.0153	AA	0.0032
Minimum	<	3.8	<	5	<	9	1.20	0.0009	<	0.0082	AA	0.0016

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations							Loadings				
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/3/2006												
4/10/2006												
4/17/2006												
4/24/2006												
5/1/2006												
5/8/2006	<	5.5	<	7	<	9	1.63	0.0007	<	0.0048	AA	0.0011
5/15/2006	<	7.5	<	6	<	9	1.66	0.0009	<	0.0055	AA	0.0015
5/22/2006	<	7.3	<	6	<	9	1.38	0.0016	<	0.0113	AA	0.0026
5/29/2006	<	6.8	<	6	<	9	1.55	0.0017	<	0.0106	AA	0.0028
6/5/2006	<	3.6	<	5	<	9	0.78	0.0009	<	0.0097	AA	0.0015
6/12/2006	<	5.5	<	8	<	9	0.88	0.0004	<	0.0061	AA	0.0007
6/19/2006	<	5.6	<	8	<	9	0.94	0.0006	<	0.0084	AA	0.0010
6/26/2006	<	5.5	<	8	<	9	0.76	0.0009	<	0.0164	AA	0.0015
Total	<	47.3	<	55	<	73	9.58	0.0076	<	0.0728	AA	0.0126
Average	<	5.9	<	7	<	9	1.20	0.0009	<	0.0091	AA	0.0016
Maximum	<	7.5	<	8	<	9	1.66	0.0017	<	0.0164	AA	0.0028
Minimum	<	3.6	<	5	<	9	0.76	0.0004	<	0.0048	AA	0.0007

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May, 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
7/3/2006	<	3.2	<	7	<	9		0.29		0.025	<	0.186	<	0.24		0.007
7/10/2006	<	3.3	<	7	<	9		0.34		0.030	<	0.183	<	0.23		0.009
7/17/2006	<	3.9	<	6	<	9		0.39		0.039	<	0.166	<	0.28		0.011
7/24/2006	<	4.5	<	8	<	9		0.32		0.036	<	0.248	<	0.29		0.010
7/31/2006	<	4.0	<	7	<	9		0.21		0.020	<	0.207	<	0.25		0.006
8/7/2006		5.8	<	8	<	9		0.20		0.184	<	0.243	<	0.28		0.006
8/14/2006	<	4.1	<	6	<	9		0.19		0.016	<	0.148	<	0.22		0.005
8/21/2006	<	4.9	<	7	<	9		0.22		0.019	<	0.171	<	0.23		0.006
8/28/2006	<	3.6	<	6	<	9		0.19		0.016	<	0.150	<	0.23		0.005
9/4/2006	<	5.1	<	5	<	9		0.28		0.026	<	0.144	<	0.24		0.008
9/11/2006	<	5.5	<	6	<	9		0.25		0.023	<	0.154	<	0.23		0.007
9/18/2006		2.7		7	<	9		0.59		0.116		0.310	<	0.40		0.025
9/25/2006	<	4.3		8	<	9		0.69		0.115		0.374	<	0.45		0.033
Total	<	54.9	<	88	<	118		4.16		0.663	<	2.686	<	3.56		0.138
Average	<	4.2	<	7	<	9		0.32		0.051	<	0.207	<	0.27		0.011
Maximum		5.8		8	<	9		0.69		0.184		0.374	<	0.45		0.033
Minimum	<	2.7	<	5	<	9		0.19		0.016	<	0.144	<	0.22		0.005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001080106	< 0.021	< 0.079	< 0.054	< 0.054

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/3/2006	<	5.2	<	8	<	9	1.20	0.0003	<	0.004	AA	0.0006
7/10/2006	<	5.2		9	<	9	1.00	0.0039		0.056	AA	0.0064
7/17/2006	<	6.7	<	6	<	9	0.98	0.0090	<	0.093	AA	0.0150
7/24/2006	<	7.0	<	8	<	9	0.87	0.0048	<	0.074	AA	0.0080
7/31/2006	<	6.1		10	<	9	0.79	0.0031		0.067	AA	0.0052
8/7/2006	<	7.5	<	8	<	9	0.77	0.0048	<	0.086	AA	0.0080
8/14/2006	<	6.5	<	7	<	9	0.75	0.0028	<	0.041	AA	0.0047
8/21/2006	<	7.9	<	7	<	9	0.81	0.0034	<	0.051	AA	0.0056
8/28/2006	<	5.2	<	6	<	9	0.71	0.0029	<	0.043	AA	0.0048
9/4/2006	<	7.4	<	6	<	9	0.69	0.0033	<	0.045	AA	0.0056
9/11/2006	<	7.8	<	6	<	9	0.67	0.0024	<	0.036	AA	0.0040
9/18/2006	<	3.7	<	5	<	9	0.61	0.0060	<	0.090	AA	0.0100
9/25/2006	<	6.1	<	6	<	9	0.57	0.0063	<	0.104	AA	0.0105
Total	<	82.3	<	92	<	118	10.42	0.0530	<	0.790	AA	0.0884
Average	<	6.3	<	7	<	9	0.80	0.0041	<	0.061	AA	0.0068
Maximum	<	7.9		10	<	9	1.20	0.0090		0.104	AA	0.0150
Minimum	<	3.7	<	5	<	9	0.57	0.0003	<	0.004	AA	0.0006

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002080106	< 0.054	< 0.085	< 0.024	< 0.058

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/3/2006	12.8	68	93	7.16	0.100	0.53	0.73	0.056
7/10/2006	10.0	59	68	8.90	0.069	0.41	0.47	0.061
7/17/2006	6.6	88	114	5.83	0.054	0.72	0.93	0.047
7/24/2006	14.0	93	113	7.29	0.105	0.69	0.85	0.055
7/31/2006	8.3	57	71	4.62	0.061	0.42	0.52	0.034
8/7/2006	< 5.8	70	89	4.63	0.043	0.52	0.66	0.035
8/14/2006	< 4.9	20	24	1.70	0.036	0.15	0.18	0.013
8/21/2006	< 5.9	67	79	2.60	0.041	0.47	0.55	0.018
8/28/2006	5.1	71	96	2.96	0.036	0.50	0.67	0.021
9/4/2006	16.2	36	37	9.40	0.135	0.30	0.31	0.078
9/11/2006	23.7	36	36	10.30	0.176	0.26	0.27	0.076
9/18/2006	20.4	40	37	9.87	0.180	0.35	0.32	0.087
9/25/2006	26.8	88	108	12.70	0.233	0.77	0.94	0.110
Total	< 160.5	791	963	87.96	1.269	6.09	7.39	0.692
Average	< 12.3	61	74	6.77	0.098	0.47	0.57	0.053
Maximum	26.8	93	114	12.70	0.233	0.77	0.94	0.110
Minimum	< 4.9	20	24	1.70	0.036	0.15	0.18	0.013

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003080106	< 0.051	< 0.065	< 0.065	< 0.065

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l		Alpha mCi	Beta mCi	Tc mCi	U kg
7/3/2006	<	3.8	17	<	9	0.89		0.011	0.36	AA	0.019
7/10/2006	<	3.7	16	<	9	0.72		0.010	0.38	AA	0.017
7/17/2006	<	4.2	10	<	9	0.57		0.008	0.24	AA	0.014
7/24/2006	<	5.2	14	<	9	0.59		0.009	0.33	AA	0.014
7/31/2006	<	4.5	21	<	9	0.91		0.013	0.49	AA	0.021
8/7/2006	<	5.3	21	<	9	0.53		0.008	0.52	AA	0.013
8/14/2006	<	4.5	15	<	9	0.46		0.007	0.35	AA	0.011
8/21/2006	<	5.6	17	<	9	0.50		0.009	0.50	AA	0.014
8/28/2006	<	3.9	16	<	9	0.61		0.010	0.44	AA	0.017
9/4/2006	<	5.5	16	<	9	0.46		0.005	0.31	AA	0.009
9/11/2006	<	5.9	16	<	9	0.41		0.006	0.38	AA	0.010
9/18/2006	<	2.8	16	<	9	0.42		0.006	0.41	AA	0.011
9/25/2006	<	4.9	19	<	9	0.42		0.006	0.48	AA	0.011
Total	<	59.8	214	<	118	7.49		0.108	5.20	AA	0.180
Average	<	4.6	16	<	9	0.58		0.008	0.40	AA	0.014
Maximum	<	5.9	21	<	9	0.91		0.013	0.52	AA	0.021
Minimum	<	2.8	10	<	9	0.41		0.005	0.24	AA	0.009

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004080206	< 0.020	< 0.125	< 0.020	< 0.090

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/3/2006	AL	AL	AL	AL	AL	AL	AL	AL
7/10/2006	AL	AL	AL	AL	AL	AL	AL	AL
7/17/2006	AL	AL	AL	AL	AL	AL	AL	AL
7/24/2006	AL	AL	AL	AL	AL	AL	AL	AL
7/31/2006	AL	AL	AL	AL	AL	AL	AL	AL
8/7/2006	AL	AL	AL	AL	AL	AL	AL	AL
8/14/2006	AL	AL	AL	AL	AL	AL	AL	AL
8/21/2006	AL	AL	AL	AL	AL	AL	AL	AL
8/28/2006	AL	AL	AL	AL	AL	AL	AL	AL
9/4/2006	AL	AL	AL	AL	AL	AL	AL	AL
9/11/2006	AL	AL	AL	AL	AL	AL	AL	AL
9/18/2006	AL	AL	AL	AL	AL	AL	AL	AL
9/25/2006	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/3/2006		3.7	<	7	<	9	4.19	0.025	<	0.049	AA	0.028
7/10/2006		3.8	<	7	<	9	4.06	0.020	<	0.040	AA	0.022
7/17/2006	<	4.1	<	6	<	9	4.08	0.020	<	0.046	AA	0.033
7/24/2006	<	4.7	<	8	<	9	3.92	0.019	<	0.061	AA	0.031
7/31/2006	<	4.2	<	7	<	9	4.26	0.014	<	0.039	AA	0.023
8/7/2006	<	4.8	<	8	<	9	2.67	0.012	<	0.055	AA	0.019
8/14/2006	<	4.2	<	6	<	9	3.42	0.014	<	0.040	AA	0.023
8/21/2006	<	5.0	<	7	<	9	3.20	0.008	<	0.029	AA	0.013
8/28/2006	<	3.6	<	6	<	9	3.86	0.011	<	0.028	AA	0.018
9/4/2006	<	5.2	<	5	<	9	4.87	0.016	<	0.030	AA	0.027
9/11/2006	<	5.5	<	6	<	9	5.88	0.016	<	0.026	AA	0.026
9/18/2006		5.3		9	<	9	6.73	0.068		0.122	AA	0.087
9/25/2006	<	4.5		12	<	9	5.91	0.038		0.125	AA	0.064
Total	<	58.6	<	94	<	118	57.05	0.281	<	0.690	AA	0.416
Average	<	4.5	<	7	<	9	4.39	0.022	<	0.053	AA	0.032
Maximum	<	5.5		12	<	9	6.73	0.068		0.125	AA	0.087
Minimum	<	3.6	<	5	<	9	2.67	0.008	<	0.026	AA	0.013

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009080106	< 0.019	< 0.057	< 0.031	< 0.021

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/3/2006	<	3.5	<	7	<	9	1.30	0.0065	<	0.061	AA	0.011
7/10/2006	<	3.4	<	7	<	9	1.24	0.0063	<	0.062	AA	0.011
7/17/2006	<	4.1	<	6	<	9	1.39	0.0066	<	0.045	AA	0.011
7/24/2006	<	4.8		14	<	9	1.20	0.0057		0.112	AA	0.010
7/31/2006	<	4.2	<	7	<	9	0.96	0.0036	<	0.046	AA	0.006
8/7/2006	<	4.9	<	8	<	9	0.67	0.0030	<	0.057	AA	0.005
8/14/2006	<	4.2	<	6	<	9	0.76	0.0029	<	0.039	AA	0.005
8/21/2006	<	5.2	<	7	<	9	0.76	0.0029	<	0.043	AA	0.005
8/28/2006	<	3.7	<	6	<	9	0.64	0.0025	<	0.040	AA	0.004
9/4/2006	<	5.3		6	<	9	1.66	0.0063		0.036	AA	0.011
9/11/2006	<	5.7	<	6	<	9	1.81	0.0050	<	0.027	AA	0.008
9/18/2006	<	2.6		9	<	9	2.25	0.0160		0.101	AA	0.027
9/25/2006	<	4.7		7	<	9	2.40	0.0190		0.088	AA	0.032
Total	<	56.3	<	95	<	118	17.04	0.0864	<	0.757	AA	0.144
Average	<	4.3	<	7	<	9	1.31	0.0066	<	0.058	AA	0.011
Maximum	<	5.7		14	<	9	2.40	0.0190		0.112	AA	0.032
Minimum	<	2.6	<	6	<	9	0.64	0.0025	<	0.027	AA	0.004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010080106	< 0.057	< 0.0856	< 0.074	< 0.058

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations								Loadings			
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/3/2006	<	3.5	<	7	<	9	0.52	0.00011	<	0.0027	AA	0.00019
7/10/2006	<	3.6	<	7	<	9	0.71	0.00008	<	0.0014	AA	0.00013
7/17/2006	<	4.2	<	6	<	9	0.51	0.00005	<	0.0009	AA	0.00008
7/24/2006	<	4.7	<	8	<	9	0.46	0.00009	<	0.0024	AA	0.00015
7/31/2006	<	4.3	<	7	<	9	0.51	0.00002	<	0.0006	AA	0.00004
8/7/2006	<	5.1	<	8	<	9	0.44	0.00010	<	0.0028	AA	0.00016
8/14/2006	<	4.4	<	6	<	9	0.45	0.00002	<	0.0004	AA	0.00003
8/21/2006	<	5.2	<	7	<	9	0.40	0.00002	<	0.0006	AA	0.00003
8/28/2006	<	3.8	<	6	<	9	0.19	0.00001	<	0.0003	AA	0.00001
9/4/2006	<	5.5	<	5	<	9	0.61	0.00002	<	0.0002	AA	0.00003
9/11/2006	<	5.7	<	6	<	9	0.45	0.00004	<	0.0009	AA	0.00007
9/18/2006		2.9	<	5	<	9	0.79	0.00305	<	0.0055	AA	0.00084
9/25/2006	<	4.4	<	5	<	9	0.79	0.00064	<	0.0073	AA	0.00106
Total	<	57.3	<	84	<	118	6.83	0.00424	<	0.0261	AA	0.00282
Average	<	4.4	<	6	<	9	0.53	0.00033	<	0.0020	AA	0.00022
Maximum	<	5.7	<	8	<	9	0.79	0.00305		0.0073	AA	0.00106
Minimum		2.9	<	5	<	9	0.19	0.00001	<	0.0002	AA	0.00001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011080106	< 0.055	< 0.059	< 0.059	< 0.059

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations							Loadings				
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/3/2006	<	4.5	<	5	<	9	1.35	0.0012	<	0.0077	AA	0.0020
7/10/2006	<	4.5	<	5	<	9	1.23	0.0011	<	0.0082	AA	0.0019
7/17/2006	<	4.4	<	5	<	9	1.19	0.0024	<	0.0181	AA	0.0041
7/24/2006	<	4.9	<	6	<	9	1.02	0.0008	<	0.0081	AA	0.0013
7/31/2006	<	4.9	<	6	<	9	0.91	0.0003	<	0.0039	AA	0.0006
8/7/2006	<	7.7	<	6	<	9	1.15	0.0017	<	0.0146	AA	0.0028
8/14/2006	<	6.9	<	6	<	9	1.13	0.0004	<	0.0036	AA	0.0007
8/21/2006	<	7.8	<	6	<	9	0.96	0.0003	<	0.0030	AA	0.0005
8/28/2006	<	3.1	<	7	<	9	0.98	0.0005	<	0.0062	AA	0.0009
9/4/2006	<	3.1	<	7	<	9	0.84	0.0005	<	0.0073	AA	0.0009
9/11/2006	<	3.8		5	<	9	0.75	0.0004		0.0047	AA	0.0007
9/18/2006	<	3.6	<	5	<	10	0.66	0.0020	<	0.0227	AA	0.0033
9/25/2006	<	3.5	<	5	<	9	0.59	0.0022	<	0.0282	AA	0.0037
Total	<	62.7	<	75	<	119	12.76	0.0139	<	0.1362	AA	0.0232
Average	<	4.8	<	6	<	9	0.98	0.0011	<	0.0105	AA	0.0018
Maximum	<	7.8	<	7	<	10	1.35	0.0024	<	0.0282	AA	0.0041
Minimum	<	3.1	<	5	<	9	0.59	0.0003	<	0.0030	AA	0.0005

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/3/2006	< 4.6	< 5	< 9	0.71	0.0007	< 0.009	AA	0.0012
7/10/2006	< 4.4	< 5	< 9	0.59	0.0002	< 0.003	AA	0.0004
7/17/2006	< 4.2	< 5	< 9	0.54	0.0076	< 0.123	AA	0.0127
7/24/2006	< 4.9	< 6	< 9	0.54	0.0007	< 0.012	AA	0.0011
7/31/2006	8.6	< 6	< 9	0.61	0.0045	< 0.003	AA	0.0003
8/7/2006	< 7.5	< 6	< 9	0.65	0.0007	< 0.011	AA	0.0012
8/14/2006	< 7.1	< 6	< 9	0.51	0.0003	< 0.006	AA	0.0005
8/21/2006	< 7.2	< 6	< 9	0.29	0.0002	< 0.006	AA	0.0003
8/28/2006	< 3.2	< 7	< 9	0.51	0.0004	< 0.010	AA	0.0007
9/4/2006	3.5	< 7	< 9	< 0.64	0.0058	< 0.012	AA	< 0.0011
9/11/2006	< 3.9	7	< 9	0.54	0.0004	0.008	AA	0.0007
9/18/2006	< 3.5	< 5	< 9	0.38	0.0016	< 0.031	AA	0.0026
9/25/2006	< 3.5	< 5	< 9	0.41	0.0014	< 0.025	AA	0.0023
Total	< 66.1	< 76	< 118	< 6.92	0.0245	< 0.260	AA	< 0.0250
Average	< 5.1	< 6	< 9	< 0.53	0.0019	< 0.020	AA	< 0.0019
Maximum	8.6	7	< 9	0.71	0.0076	< 0.123	AA	0.0127
Minimum	< 3.2	< 5	< 9	0.29	0.0002	< 0.003	AA	0.0003

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically has no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May, 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because they emit substantially identical radiation.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDA/LLDs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, 011, 012, and 013 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations							Loadings						
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi		Tc mCi	U kg
10/2/2006	<	3.0	<	8	<	9	0.70	0.098	<	0.321	<	0.378	0.0287
10/9/2006	<	3.4		8	<	9	0.62	0.190		0.694	<	0.807	0.0557
10/16/2006	<	3.0	<	7	<	9	0.31	0.033	<	0.215	<	0.283	0.0098
10/23/2006	<	4.4	<	7	<	9	1.16	0.142	<	0.233	<	0.325	0.0416
10/30/2006		4.4		12		17	1.04	0.178		0.478		0.695	0.0418
11/6/2006	<	4.7		11		13	0.99	0.071		0.225		0.263	0.0208
11/13/2006	<	4.1	<	6	<	9	0.62	0.031	<	0.090	<	0.130	0.0091
11/20/2006	<	3.9		12	<	10	1.41	0.045		0.144	<	0.113	0.0165
11/27/2006	<	4.1	<	8	<	10	0.81	0.021	<	0.059	<	0.076	0.0063
12/4/2006	<	4.2		8	<	9	0.60	0.029		0.116	<	0.125	0.0085
12/11/2006	<	3.7		7	<	9	0.50	0.022		0.085	<	0.109	0.0063
12/18/2006	<	3.6	<	6	<	9	0.42	0.017	<	0.071	<	0.106	0.0050
12/25/2006	<	6.4	<	6	<	9	1.22	0.126	<	0.173	<	0.266	0.0368
Total	<	52.9	<	104	<	130	10.40	1.005	<	2.903	<	3.674	0.2868
Average	<	4.1	<	8	<	10	0.80	0.077	<	0.223	<	0.283	0.0221
Maximum	<	6.4		12	<	17	1.41	0.190		0.694	<	0.807	0.0557
Minimum	<	3.0	<	6	<	9	0.31	0.017	<	0.059	<	0.076	0.0050

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001120506	< 0.0697	< 0.0769	< 0.0524	< 0.0934

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	< 3.9	< 8	< 9	0.59	0.0046	< 0.108	AA	0.0077
10/9/2006	< 4.2	< 8	< 9	0.48	0.0068	< 0.189	AA	0.0114
10/16/2006	< 3.5	< 7	< 9	0.39	0.0022	< 0.067	AA	0.0036
10/23/2006	< 5.0	< 7	< 9	0.48	0.0075	< 0.171	AA	0.0125
10/30/2006	< 4.9	< 8	< 9	0.55	0.0083	< 0.193	AA	0.0138
11/6/2006	< 5.3	< 6	< 9	0.52	0.0040	< 0.084	AA	0.0067
11/13/2006	< 4.7	< 6	< 9	0.62	0.0029	< 0.048	AA	0.0048
11/20/2006	< 4.5	< 8	< 10	0.61	0.0057	< 0.120	AA	0.0095
11/27/2006	< 4.4	< 8	< 10	0.76	0.0025	< 0.043	AA	0.0042
12/4/2006	< 5.1	< 8	< 9	0.65	0.0045	< 0.088	AA	0.0076
12/11/2006	< 4.6	< 5	< 9	0.73	0.0025	< 0.031	AA	0.0042
12/18/2006	< 4.1	< 6	< 9	0.67	0.0022	< 0.033	AA	0.0037
12/25/2006	< 7.6	< 6	< 9	0.84	0.0084	< 0.098	AA	0.0139
Total	< 61.8	< 90	< 118	7.89	0.0622	< 1.273	AA	0.1036
Average	< 4.8	< 7	< 9	0.61	0.0048	< 0.098	AA	0.0080
Maximum	< 7.6	< 8	< 10	0.84	0.0084	< 0.193	AA	0.0139
Minimum	< 3.5	< 5	< 9	0.39	0.0022	< 0.031	AA	0.0036

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002120506	< 0.0686	< 0.1218	< 0.0279	< 0.0751

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	23.2	46	53	13.50	0.173	0.34	0.39	0.101
10/9/2006	19.2	48	52	8.95	0.151	0.37	0.41	0.071
10/16/2006	10.8	82	112	5.60	0.070	0.53	0.73	0.036
10/23/2006	36.6	68	90	17.40	0.333	0.62	0.82	0.158
10/30/2006	58.3	124	196	22.50	0.511	1.09	1.72	0.197
11/6/2006	25.9	72	58	13.80	0.209	0.58	0.47	0.111
11/13/2006	32.3	83	98	19.10	0.249	0.64	0.75	0.147
11/20/2006	23.2	72	85	13.00	0.157	0.49	0.58	0.088
11/27/2006	18.0	68	72	8.43	0.107	0.41	0.43	0.050
12/4/2006	25.6	75	102	14.40	0.170	0.50	0.68	0.096
12/11/2006	9.6	68	93	8.18	0.063	0.45	0.61	0.054
12/18/2006	9.9	73	102	6.29	0.064	0.47	0.66	0.041
12/25/2006	14.8	76	114	10.90	0.102	0.52	0.78	0.075
Total	307.4	955	1228	162.05	2.360	7.01	9.04	1.225
Average	23.6	73	94	12.47	0.182	0.54	0.70	0.094
Maximum	58.3	124	196	22.50	0.511	1.09	1.72	0.197
Minimum	9.6	46	52	5.60	0.063	0.34	0.39	0.036

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003120506	< 0.0864	< 0.1445	< 0.0585	< 0.0585

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	<	3.3	19	<	9	0.78	0.0120	0.474	AA	0.0199
10/9/2006	<	3.8	12	<	9	0.48	0.0063	0.251	AA	0.0106
10/16/2006	<	3.3	17	<	9	0.52	0.0073	0.382	AA	0.0121
10/23/2006	<	4.9	12	<	9	0.56	0.0081	0.292	AA	0.0135
10/30/2006	<	4.7	20	<	9	0.53	0.0075	0.472	AA	0.0126
11/6/2006	<	5.3	12	<	9	0.63	0.0092	0.287	AA	0.0152
11/13/2006	<	4.5	11	<	9	0.43	0.0064	0.278	AA	0.0106
11/20/2006	<	4.2	18	<	10	0.44	0.0067	0.460	AA	0.0112
11/27/2006	<	4.2	14	<	10	0.47	0.0063	0.327	AA	0.0106
12/4/2006	<	4.6	14	<	9	0.49	0.0045	0.216	AA	0.0074
12/11/2006		AL	AL		AL	AL	AL	AL	AL	AL
12/18/2006		AL	AL		AL	AL	AL	AL	AL	AL
12/25/2006	<	6.6	12	<	9	0.66	0.0052	0.162	AA	0.0087
Total	<	49.4	161	<	100	5.99	0.0795	3.601	AA	0.1324
Average	<	3.8	12	<	8	0.46	0.0061	0.277	AA	0.0102
Maximum	<	6.6	20	<	10	0.78	0.0120	0.474	AA	0.0199
Minimum	<	3.3	11	<	9	0.43	0.0063	0.162	AA	0.0074

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004120506	< 0.0719	< 0.119	< 0.0734	< 0.0734

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	AL	AL	AL	AL	AL	AL	AL	AL
10/9/2006	AL	AL	AL	AL	AL	AL	AL	AL
10/16/2006	AL	AL	AL	AL	AL	AL	AL	AL
10/23/2006	AL	AL	AL	AL	AL	AL	AL	AL
10/30/2006	< 4.1	< 7.4	< 8.8	0.33	0.0007	< 0.026	AA	0.0011
11/6/2006	< 4.6	< 6.3	< 8.9	0.30	0.0089	< 0.310	AA	0.0148
11/13/2006	AL	AL	AL	AL	AL	AL	AL	AL
11/20/2006	AL	AL	AL	AL	AL	AL	AL	AL
11/27/2006	AL	AL	AL	AL	AL	AL	AL	AL
12/4/2006	AL	AL	AL	AL	AL	AL	AL	AL
12/11/2006	AL	AL	AL	AL	AL	AL	AL	AL
12/18/2006	AL	AL	AL	AL	AL	AL	AL	AL
12/25/2006	AL	AL	AL	AL	AL	AL	AL	AL
Total	< 8.7	< 14	< 17.7	0.63	0.0096	< 0.336	AA	0.0159
Average	< 4.4	< 7	< 8.9	0.32	0.0048	< 0.168	AA	0.0080
Maximum	< 4.6	< 7	< 8.9	0.33	0.0089	< 0.310	AA	0.0148
Minimum	< 4.1	< 6	< 8.8	0.30	0.0007	< 0.026	AA	0.0011

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'005102806	< 0.0211	< 0.1197	< 0.0263	< 0.0988

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
10/2/2006		3.9	<	8	<	9		6.56		0.034	<	0.070		AA		0.058
10/9/2006		6.0	<	8	<	9		6.22		0.059	<	0.076		AA		0.061
10/16/2006		10.3	<	7	<	9		6.46		0.083	<	0.056		AA		0.052
10/23/2006		5.4	<	7	<	9		6.70		0.073	<	0.087		AA		0.089
10/30/2006		6.8	<	7	<	9		5.83		0.147	<	0.162		AA		0.127
11/6/2006	<	4.8	<	6	<	9		6.21		0.081	<	0.139		AA		0.136
11/13/2006	<	4.2	<	6	<	9		7.50		0.026	<	0.038		AA		0.046
11/20/2006		6.3	<	8	<	10		7.18		0.102	<	0.122		AA		0.116
11/27/2006		6.6	<	8	<	10		8.10		0.037	<	0.043		AA		0.046
12/4/2006		7.1	<	7	<	9		5.85		0.060	<	0.062		AA		0.050
12/11/2006		5.8		8	<	9		7.07		0.023		0.031		AA		0.028
12/18/2006		6.6	<	6	<	9		6.60		0.027	<	0.025		AA		0.028
12/25/2006	<	6.3		7	<	9		7.57		0.092		0.148		AA		0.153
Total	<	80.1	<	93	<	118		87.85		0.845	<	1.058		AA		0.989
Average	<	6.2	<	7	<	9		6.76		0.065	<	0.081		AA		0.076
Maximum		10.3		8	<	10		8.10		0.147	<	0.162		AA		0.153
Minimum		3.9	<	6	<	9		5.83		0.023	<	0.025		AA		0.028

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009120706	< 0.0331	< 0.1543	< 0.0208	< 0.0563

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/2/2006		3.5	<	8	<	9	2.93	0.0336	<	0.075	AA	0.0278
10/9/2006	<	3.6	<	8	<	9	1.80	0.0152	<	0.108	AA	0.0253
10/16/2006		4.7	<	7	<	9	2.39	0.0446	<	0.066	AA	0.0226
10/23/2006	<	4.2	<	7	<	9	1.64	0.0178	<	0.117	AA	0.0296
10/30/2006	<	4.3	<	7	<	9	2.47	0.0230	<	0.116	AA	0.0384
11/6/2006	<	5.0	<	6	<	9	2.86	0.0261	<	0.097	AA	0.0435
11/13/2006	<	4.3	<	6	<	9	2.95	0.0126	<	0.044	AA	0.0210
11/20/2006	<	4.1	<	8	<	10	3.96	0.0245	<	0.078	AA	0.0408
11/27/2006	<	4.3	<	8	<	10	2.70	0.0097	<	0.046	AA	0.0162
12/4/2006	<	4.6	<	7	<	9	1.99	0.0095	<	0.059	AA	0.0158
12/11/2006	<	3.9	<	5	<	9	1.44	0.0049	<	0.029	AA	0.0081
12/18/2006	<	3.8	<	6	<	9	1.46	0.0052	<	0.036	AA	0.0087
12/25/2006	<	6.3	<	6	<	9	2.32	0.0138	<	0.057	AA	0.0230
Total	<	56.6	<	89	<	118	30.91	0.2403	<	0.926	AA	0.3206
Average	<	4.4	<	7	<	9	2.38	0.0185	<	0.071	AA	0.0247
Maximum	<	6.3	<	8	<	10	3.96	0.0446	<	0.117	AA	0.0435
Minimum		3.5	<	5	<	9	1.44	0.0049	<	0.029	AA	0.0081

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010120506	< 0.0304	< 0.0714	< 0.023	< 0.0565

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	< 2.8	< 8	< 9	1.04	0.0003	< 0.0038	AA	0.0005
10/9/2006	< 3.7	< 8	< 9	0.91	0.0004	< 0.0055	AA	0.0006
10/16/2006	< 3.2	7	< 9	0.86	0.0003	0.0036	AA	0.0004
10/23/2006	< 4.6	< 7	< 9	1.18	0.0002	< 0.0017	AA	0.0003
10/30/2006	< 4.4	< 8	< 9	0.98	0.0006	< 0.0072	AA	0.0009
11/6/2006	< 5.0	< 6	< 9	1.17	0.0002	< 0.0017	AA	0.0003
11/13/2006	< 4.4	< 6	< 9	1.17	0.0001	< 0.0010	AA	0.0002
11/20/2006	< 4.1	< 8	< 10	0.97	0.0002	< 0.0026	AA	0.0003
11/27/2006	< 4.2	< 8	< 10	0.90	0.0001	< 0.0008	AA	0.0001
12/4/2006	< 4.6	< 7	< 9	0.88	0.0001	< 0.0017	AA	0.0002
12/11/2006	< 4.0	6	< 9	0.80	0.0000	0.0005	AA	0.0001
12/18/2006	< 3.7	< 6	< 9	0.75	0.0001	< 0.0007	AA	0.0001
12/25/2006	< 6.0	7	< 9	1.05	0.0002	0.0022	AA	0.0003
Total	< 54.7	< 91	< 118	12.66	0.0026	< 0.0329	AA	0.0044
Average	< 4.2	< 7	< 9	0.97	0.0002	< 0.0025	AA	0.0003
Maximum	< 6.0	< 8	< 10	1.18	0.0006	< 0.0072	AA	0.0009
Minimum	< 2.8	< 6	< 9	0.75	0.0000	< 0.0005	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011120506	< 0.0285	< 0.1217	< 0.0198	< 0.0784

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	< 4.0	< 7	< 9	0.77	0.0018	< 0.0273	AA	0.0030
10/9/2006	< 3.7	< 7	< 9	0.53	0.0022	< 0.0474	AA	0.0036
10/16/2006	< 4.0	< 7	< 9	0.63	0.0014	< 0.0264	AA	0.0023
10/23/2006	< 3.8	< 7	< 9	0.62	0.0034	< 0.0634	AA	0.0057
10/30/2006	< 4.2	< 5	< 9	0.67	0.0042	< 0.0566	AA	0.0070
11/6/2006	< 4.4	< 6	< 9	0.75	0.0024	< 0.0288	AA	0.0040
11/13/2006	< 4.6	< 6	< 9	1.01	0.0013	< 0.0119	AA	0.0022
11/20/2006	< 3.8	< 5	20	1.03	0.0042	< 0.0331	0.14	0.0070
11/27/2006	< 3.7	7	< 9	1.40	0.0012	0.0095	AA	0.0020
12/4/2006	< 3.8	< 5	< 9	1.08	0.0025	< 0.0185	AA	0.0041
12/11/2006	< 4.7	< 7	< 9	1.20	0.0009	< 0.0081	AA	0.0014
12/18/2006	< 5.1	< 7	< 9	1.22	0.0010	< 0.0096	AA	0.0017
12/25/2006	< 4.7	< 7	< 9	1.25	0.0071	< 0.0641	AA	0.0119
Total	< 54.5	< 82	< 129	12.16	0.0335	< 0.4047	0.14	0.0558
Average	< 4.2	< 6	< 10	0.94	0.0026	< 0.0311	0.14	0.0043
Maximum	< 5.1	7	20	1.40	0.0071	< 0.0641	0.14	0.0119
Minimum	< 3.7	< 5	< 9	0.53	0.0009	< 0.0081	0.14	0.0014

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/2/2006	< 4.0	< 7	< 9	0.56	0.0014	< 0.0287	AA	0.0023
10/9/2006	< 3.9	< 7	< 9	0.63	0.0019	< 0.0356	AA	0.0032
10/16/2006	< 4.2	< 7	< 9	0.88	0.0022	< 0.0294	AA	0.0036
10/23/2006	< 4.0	< 7	< 9	0.91	0.0038	< 0.0492	AA	0.0063
10/30/2006	< 4.4	< 6	< 9	1.01	0.0058	< 0.0517	AA	0.0096
11/6/2006	< 4.7	< 6	< 9	1.21	0.0031	< 0.0238	AA	0.0052
11/13/2006	< 4.9	< 6	< 9	1.45	0.0018	< 0.0113	AA	0.0030
11/20/2006	< 4.0	< 5	< 9	1.42	0.0051	< 0.0295	AA	0.0086
11/27/2006	< 4.2	< 5	< 9	1.80	0.0013	< 0.0059	AA	0.0022
12/4/2006	< 4.0	< 5	< 9	1.59	0.0021	< 0.0107	AA	0.0035
12/11/2006	< 5.0	8	< 9	1.70	0.0010	0.0078	AA	0.0016
12/18/2006	< 4.8	< 7	< 9	1.44	0.0011	< 0.0087	AA	0.0018
12/25/2006	< 4.8	< 7	< 9	1.54	0.0076	< 0.0559	AA	0.0127
Total	< 56.9	< 81	< 117	16.14	0.0381	< 0.3481	AA	0.0635
Average	< 4.4	< 6	< 9	1.24	0.0029	< 0.0268	AA	0.0049
Maximum	< 5.0	8	< 9	1.80	0.0076	< 0.0559	AA	0.0127
Minimum	< 3.9	< 5	< 9	0.56	0.0010	< 0.0059	AA	0.0016

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2006 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because the analytical method used cannot distingush them.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
1/1/2007	<	3.8		10	<	9		0.93		0.096		0.289	<	0.271		0.028
1/8/2007	<	5.3		13	<	9		1.15		0.144		0.459	<	0.340		0.042
1/15/2007	<	5.3		16		15		1.64		0.189		0.589		0.546		0.059
1/22/2007		3.2		38		48		2.28		0.075		0.876		1.109		0.053
1/29/2007		6.5		6	<	9		1.42		0.101		0.091	<	0.138		0.022
2/5/2007	<	4.6	<	5	<	9		0.55		0.017	<	0.049	<	0.083		0.005
2/12/2007		4.3		6	<	9		0.59		0.026		0.038	<	0.056		0.004
2/19/2007		5.3		6	<	9		0.92		0.066		0.073	<	0.113		0.011
2/26/2007	<	4.8		16		15		2.14		0.156		0.521		0.475		0.070
3/5/2007		7.2		25		28		1.69		0.183		0.622		0.710		0.043
3/12/2007	<	3.4		11	<	9		0.57		0.038		0.225	<	0.184		0.011
3/19/2007		2.2	<	8	<	9		0.56		0.057	<	0.199	<	0.227		0.015
3/26/2007	<	3.2	<	5	<	9		0.49		0.060	<	0.194	<	0.317		0.017
Total	<	59.1	<	164	<	187		14.93		1.209	<	4.225	<	4.568		0.381
Average	<	4.5	<	13	<	14		1.15		0.093	<	0.325	<	0.351		0.029
Maximum		7.2		38		48		2.28		0.189		0.876		1.109		0.070
Minimum		2.2	<	5	<	9		0.49		0.017		0.038	<	0.056		0.004

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
'001030107	<	0.066	<	0.079	<	0.054	<	0.079

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/1/2007	<	4.7	<	7	<	9	0.82	0.008	<	0.114	AA	0.013
1/8/2007	<	6.7	<	5	<	9	0.81	0.011	<	0.119	AA	0.018
1/15/2007	<	6.6	<	5	<	9	0.96	0.013	<	0.120	AA	0.022
1/22/2007		4.7		7	<	9	0.88	0.069		0.108	AA	0.013
1/29/2007		2.6		6	<	9	1.01	0.026		0.059	AA	0.010
2/5/2007	<	6.6	<	6	<	9	1.34	0.006	<	0.039	AA	0.009
2/12/2007	<	3.7		7	<	9	1.02	0.004		0.049	AA	0.007
2/19/2007		4.7	<	6	<	9	0.90	0.082	<	0.096	AA	0.016
2/26/2007	<	6.3	<	6	<	9	0.98	0.021	<	0.201	AA	0.036
3/5/2007	<	5.4	<	8	<	9	1.25	0.016	<	0.174	AA	0.027
3/12/2007		6.6	<	7	<	9	1.17	0.040	<	0.045	AA	0.007
3/19/2007		3.1	<	8	<	9	1.19	0.023	<	0.061	AA	0.009
3/26/2007	<	5.4	<	6	<	9	1.25	0.005	<	0.037	AA	0.008
Total	<	67.1	<	85	<	117	13.58	0.323	<	1.222	AA	0.193
Average	<	5.2	<	7	<	9	1.04	0.025	<	0.094	AA	0.015
Maximum	<	6.7	<	8	<	9	1.34	0.082	<	0.201	AA	0.036
Minimum		2.6	<	5	<	9	0.81	0.004	<	0.037	AA	0.007

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
'002030107	<	0.083	<	0.107	<	0.060	<	0.098

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/1/2007	12.9	77	107	8.82	0.086	0.511	0.710	0.059
1/8/2007	11.9	87	101	7.53	0.095	0.698	0.806	0.060
1/15/2007	8.4	85	101	5.02	0.073	0.740	0.882	0.044
1/22/2007	10.0	83	106	7.54	0.081	0.678	0.864	0.061
1/29/2007	8.1	82	116	6.28	0.061	0.614	0.872	0.047
2/5/2007	11.5	86	117	8.61	0.079	0.586	0.802	0.059
2/12/2007	47.4	102	137	24.20	0.259	0.557	0.748	0.132
2/19/2007	14.0	106	137	11.50	0.099	0.747	0.966	0.081
2/26/2007	8.0	86	114	9.05	0.062	0.663	0.883	0.070
3/5/2007	13.4	95	125	11.40	0.095	0.672	0.885	0.081
3/12/2007	7.5	116	147	4.88	0.038	0.586	0.743	0.025
3/19/2007	15.8	145	210	7.94	0.088	0.806	1.167	0.044
3/26/2007	5.3	14	9	4.21	0.027	0.069	0.046	0.021
Total	174.2	1163	1527	117.0	1.142	7.928	10.37	0.784
Average	13.4	89	117	9.00	0.088	0.610	0.798	0.060
Maximum	47.4	145	210	24.2	0.259	0.806	1.167	0.132
Minimum	5.3	14	9	4.21	0.027	0.069	0.046	0.021

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003030107	< 0.027	< 0.090	< 0.020	< 0.020

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 1st Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations						Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/1/2007	<	4.2	19	<	9	0.58	0.0073	0.41	AA	0.012
1/8/2007	<	5.8	16	<	9	0.47	0.005	0.30	AA	0.009
1/15/2007	<	5.7	17	<	9	0.52	0.006	0.36	AA	0.011
1/22/2007	<	2.7	17	<	9	0.49	0.006	0.33	AA	0.009
1/29/2007		1.8	14	<	9	0.48	0.035	0.27	AA	0.009
2/5/2007	<	5.1	16	<	9	0.59	0.007	0.31	AA	0.011
2/12/2007	<	2.7	13	<	9	0.55	0.006	0.25	AA	0.011
2/19/2007		9.9	19	<	9	0.58	0.208	0.39	AA	0.012
2/26/2007	<	4.4	13	<	9	0.54	0.007	0.30	AA	0.012
3/5/2007	<	3.6	16	<	9	0.64	0.009	0.38	AA	0.015
3/12/2007	<	3.6	21	<	9	0.48	0.007	0.49	AA	0.011
3/19/2007		2.6	12	<	9	0.47	0.061	0.29	AA	0.011
3/26/2007		5.4	19	<	9	0.44	0.126	0.44	AA	0.010
Total	<	57.5	211	<	117	6.83	0.492	4.51	AA	0.145
Average	<	4.4	16	<	9	0.53	0.038	0.35	AA	0.011
Maximum		9.9	21	<	9	0.64	0.208	0.49	AA	0.015
Minimum		1.8	12	<	9	0.44	0.005	0.25	AA	0.009

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004030107	< 0.064	< 0.131	< 0.035	< 0.064

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/1/2007	AL	AL	AL	AL	AL	AL	AL	AL
1/8/2007	AL	AL	AL	AL	AL	AL	AL	AL
1/15/2007	AL	AL	AL	AL	AL	AL	AL	AL
1/22/2007	AL	AL	AL	AL	AL	AL	AL	AL
1/29/2007	AL	AL	AL	AL	AL	AL	AL	AL
2/5/2007	AL	AL	AL	AL	AL	AL	AL	AL
2/12/2007	AL	AL	AL	AL	AL	AL	AL	AL
2/19/2007	AL	AL	AL	AL	AL	AL	AL	AL
2/26/2007	< 2.3	< 5	< 9	0.26	0.128	< 4.36	AA	0.213
3/5/2007	< 3.7	< 5	< 9	0.15	0.010	< 0.61	AA	0.017
3/12/2007	AL	AL	AL	AL	AL	AL	AL	AL
3/19/2007	AL	AL	AL	AL	AL	AL	AL	AL
3/26/2007	AL	AL	AL	AL	AL	AL	AL	AL
Total	< 6.0	< 11	< 18	0.41	0.138	< 4.97	AA	0.230
Average	< 3.0	< 5	< 9	0.21	0.069	< 2.48	AA	0.115
Maximum	< 3.7	< 5	< 9	0.26	0.128	< 4.36	AA	0.213
Minimum	< 2.3	< 5	< 9	0.15	0.010	< 0.61	AA	0.017

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'005022107	< 0.079	< 0.109	< 0.061	< 0.124

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/1/2007		9.3	<	7	<	9	8.16	0.161	<	0.124	AA	0.141
1/8/2007	<	5.5		6	<	9	6.78	0.078		0.118	AA	0.130
1/15/2007		6.7		7	<	9	7.01	0.157		0.168	AA	0.164
1/22/2007		4.3	<	5	<	9	6.87	0.039	<	0.042	AA	0.062
1/29/2007		9.1	<	5	<	9	7.28	0.062	<	0.035	AA	0.050
2/5/2007	<	5.6		7	<	9	9.21	0.010		0.012	AA	0.017
2/12/2007	<	3.0	<	6	<	9	6.66	0.014	<	0.025	AA	0.030
2/19/2007		13.4	<	6	<	9	4.97	0.193	<	0.082	AA	0.072
2/26/2007	<	6.6	<	6	<	9	5.94	0.088	<	0.137	AA	0.147
3/5/2007		6.1	<	8	<	9	6.32	0.067	<	0.085	AA	0.069
3/12/2007		6.4		7	<	9	7.17	0.021		0.023	AA	0.023
3/19/2007		11.6	<	8	<	9	6.87	0.068	<	0.047	AA	0.040
3/26/2007	<	4.4	<	6	<	9	6.86	0.021	<	0.029	AA	0.035
Total	<	92.0	<	82	<	117	90.10	0.980	<	0.927	AA	0.982
Average	<	7.1	<	6	<	9	6.93	0.075	<	0.071	AA	0.076
Maximum		13.4	<	8	<	9	9.21	0.193		0.168	AA	0.164
Minimum	<	3.0	<	5	<	9	4.97	0.010		0.012	AA	0.017

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009030107	< 0.036	< 0.089	< 0.054	< 0.089

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/1/2007	<	4.0	<	7	<	9	2.98	0.020	<	0.080	AA	0.033
1/8/2007	<	5.4	<	5	<	9	2.45	0.022	<	0.077	AA	0.036
1/15/2007	<	5.5		6	<	9	2.74	0.021		0.073	AA	0.035
1/22/2007		5.5		6	<	9	2.46	0.069		0.080	AA	0.031
1/29/2007		1.9	<	5	<	9	3.41	0.016	<	0.042	AA	0.028
2/5/2007	<	5.3	<	5	<	9	1.57	0.006	<	0.035	AA	0.010
2/12/2007	<	2.9	<	6	<	9	0.91	0.001	<	0.013	AA	0.002
2/19/2007		5.7	<	6	<	9	1.09	0.094	<	0.090	AA	0.018
2/26/2007	<	4.7	<	5	<	9	2.25	0.026	<	0.102	AA	0.043
3/5/2007	<	4.0	<	8	<	9	2.94	0.023	<	0.100	AA	0.039
3/12/2007	<	3.7	<	7	<	9	1.74	0.006	<	0.043	AA	0.011
3/19/2007		3.7	<	8	<	9	2.08	0.029	<	0.062	AA	0.017
3/26/2007	<	3.8	<	6	<	9	2.32	0.010	<	0.040	AA	0.017
Total	<	56.1	<	79	<	117	28.94	0.344	<	0.836	AA	0.320
Average	<	4.3	<	6	<	9	2.23	0.026	<	0.064	AA	0.025
Maximum		5.7	<	8	<	9	3.41	0.094	<	0.102	AA	0.043
Minimum		1.9	<	5	<	9	0.91	0.001	<	0.013	AA	0.002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010030107	< 0.075	< 0.065	< 0.065	< 0.019

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
1/1/2007	< 4.1	< 7	< 9	0.91	0.00020	< 0.0026	AA	0.00033
1/8/2007	< 5.6	< 5	< 9	1.08	0.00046	< 0.0037	AA	0.00077
1/15/2007	< 5.7	< 5	< 9	1.24	0.00047	< 0.0033	AA	0.00079
1/22/2007	< 2.6	< 5	< 9	1.08	0.00010	< 0.0007	AA	0.00017
1/29/2007	< 1.1	5	< 9	0.77	0.00007	0.0008	AA	0.00012
2/5/2007	< 5.0	< 5	< 9	0.99	0.00007	< 0.0007	AA	0.00012
2/12/2007	< 2.6	< 5	< 9	0.57	0.00000	< 0.0001	AA	0.00001
2/19/2007	< 2.8	< 5	< 9	0.95	0.00035	< 0.0034	AA	0.00059
2/26/2007	< 5.0	< 5	< 9	1.15	0.00227	< 0.0176	AA	0.00378
3/5/2007	< 3.6	< 8	< 9	1.05	0.00138	< 0.0165	AA	0.00231
3/12/2007	< 3.6	< 7	< 9	0.67	0.00006	< 0.0010	AA	0.00010
3/19/2007	3.4	< 8	< 9	0.79	0.00059	< 0.0013	AA	0.00014
3/26/2007	< 3.6	< 6	< 9	0.81	0.00009	< 0.0010	AA	0.00014
Total	< 48.7	< 77	< 117	12.06	0.00613	< 0.0527	AA	0.00937
Average	< 3.7	< 6	< 9	0.93	0.00047	< 0.0041	AA	0.00072
Maximum	< 5.7	< 8	< 9	1.24	0.00227	< 0.0176	AA	0.00378
Minimum	< 1.1	< 5	< 9	0.57	0.00000	< 0.0001	AA	0.00001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011030107	< 0.128	< 0.108	< 0.063	< 0.063

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/1/2007	<	3.7	<	5	<	9	0.90	0.0038	<	0.037	AA	0.0064
1/8/2007	<	3.6	<	5	<	9	0.81	0.0060	<	0.063	AA	0.0100
1/15/2007	<	3.6	<	5	<	9	0.85	0.0076	<	0.077	AA	0.0127
1/22/2007	<	3.7	<	5	<	9	0.78	0.0025	<	0.028	AA	0.0042
1/29/2007	<	2.9	<	6	<	9	1.44	0.0040	<	0.025	AA	0.0066
2/5/2007	<	2.9	<	6	<	9	1.82	0.0026	<	0.013	AA	0.0044
2/12/2007	<	2.6	<	5	<	9	0.22	0.0003	<	0.010	AA	0.0004
2/19/2007		2.6	<	5	<	9	0.18	0.0232	<	0.047	AA	0.0016
2/26/2007	<	4.3	<	5	<	9	0.71	0.0075	<	0.093	AA	0.0124
3/5/2007	<	5.6	<	6	<	9	0.58	0.0029	<	0.047	AA	0.0049
3/12/2007	<	4.5	<	5	<	9	0.88	0.0011	<	0.011	AA	0.0019
3/19/2007	<	3.1	<	5	<	9	1.30	0.0021	<	0.013	AA	0.0035
3/26/2007	<	3.3	<	5	<	9	1.36	0.0020	<	0.012	AA	0.0033
Total	<	46.4	<	68	<	119	11.83	0.0656	<	0.476	AA	0.0724
Average	<	3.6	<	5	<	9	0.91	0.0050	<	0.037	AA	0.0056
Maximum	<	5.6	<	6	<	9	1.82	0.0232	<	0.093	AA	0.0127
Minimum	<	2.6	<	5	<	9	0.18	0.0003	<	0.010	AA	0.0004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations							Loadings				
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
1/1/2007	<	3.9	<	5	<	9	1.43	0.0046	<	0.028	AA	0.0077
1/8/2007	<	3.8	<	5	<	9	1.20	0.0066	<	0.048	AA	0.0111
1/15/2007	<	4.0	<	5	<	9	1.54	0.0113	<	0.063	AA	0.0188
1/22/2007	<	3.9	<	5	<	9	1.41	0.0036	<	0.022	AA	0.0060
1/29/2007	<	3.2	<	6	<	9	2.01	0.0038	<	0.018	AA	0.0064
2/5/2007	<	3.2	<	6	<	9	2.03	0.0046	<	0.021	AA	0.0076
2/12/2007	<	3.6	<	6	<	9	2.40	0.0019	<	0.007	AA	0.0031
2/19/2007	<	5.0	<	5	<	9	0.34	0.0016	<	0.042	AA	0.0026
2/26/2007	<	5.6	<	6	<	9	0.84	0.0072	<	0.079	AA	0.0120
3/5/2007	<	5.3	<	6	<	9	1.15	0.0043	<	0.034	AA	0.0071
3/12/2007	<	3.7	<	5	<	9	1.29	0.0014	<	0.009	AA	0.0024
3/19/2007	<	4.2		9	<	9	1.46	0.0025		0.027	AA	0.0042
3/26/2007	<	4.3		5	<	9	1.36	0.0020		0.013	AA	0.0033
Total	<	53.7	<	74	<	118	18.46	0.0553	<	0.410	AA	0.0922
Average	<	4.1	<	6	<	9	1.42	0.0043	<	0.032	AA	0.0071
Maximum	<	5.6		9	<	9	2.40	0.0113	<	0.079	AA	0.0188
Minimum	<	3.2	<	5	<	9	0.34	0.0014	<	0.007	AA	0.0024

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May, 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and are regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because the analytical method used cannot distingush them.) These figures are based on quarterly grab samples. USEC does not sample for transuranics at the two DOE outfalls.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDAs vary somewhat from day to day and from outfall to outfall depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, and 011 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/2/2007	6.6	16	11	1.46	0.335	0.84	0.57	0.075
4/9/2007	8.9	13	21	0.95	0.341	0.50	0.79	0.036
4/16/2007	6.7	14	10	1.17	0.311	0.64	0.48	0.054
4/23/2007	8.6	15	12	0.97	0.316	0.57	0.43	0.036
4/30/2007	< 4.1	< 7	< 9	0.41	0.058	< 0.30	< 0.38	0.017
5/7/2007	< 4.1	< 8	< 9	0.34	0.046	< 0.30	< 0.36	0.014
5/14/2007	< 4.1	< 8	< 9	0.31	0.036	< 0.26	< 0.32	0.011
5/21/2007	< 4.7	< 7	< 9	0.27	0.037	< 0.28	< 0.36	0.011
5/28/2007	< 5.1	< 6	< 9	0.25	0.034	< 0.22	< 0.36	0.010
6/4/2007	< 3.8	< 6	< 9	0.30	0.041	< 0.23	< 0.35	0.012
6/11/2007	< 3.6	< 5	< 9	0.33	0.049	< 0.23	< 0.41	0.014
6/18/2007	< 5.9	< 6	< 9	0.31	0.043	< 0.26	< 0.37	0.012
6/25/2007	< 4.6	8	< 9	0.35	0.051	0.36	< 0.39	0.015
Total	< 70.8	< 119	< 136	7.42	1.699	< 4.98	< 5.57	0.317
Average	< 5.4	< 9	< 10	0.57	0.131	< 0.38	< 0.43	0.024
Maximum	8.9	16	21	1.46	0.341	0.84	0.79	0.075
Minimum	< 3.6	< 5	< 9	0.25	0.034	< 0.22	< 0.32	0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001060507	< 0.080	< 0.101	< 0.071	< 0.083

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations							Loadings				
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/2/2007	<	8.0	<	6	<	9	1.51	0.0187	<	0.121	AA	0.0312
4/9/2007	<	8.0	<	6	<	9	1.41	0.0079	<	0.051	AA	0.0131
4/16/2007	<	7.0	<	7	<	9	1.10	0.0176	<	0.198	AA	0.0293
4/23/2007	<	5.7	<	6	<	9	1.08	0.0050	<	0.042	AA	0.0083
4/30/2007	<	6.0	<	8	<	9	1.09	0.0040	<	0.047	AA	0.0067
5/7/2007	<	5.9	<	8	<	9	1.03	0.0101	<	0.129	AA	0.0168
5/14/2007	<	5.2	<	8	<	9	1.04	0.0040	<	0.050	AA	0.0067
5/21/2007	<	6.1	<	7	<	9	0.90	0.0029	<	0.040	AA	0.0049
5/28/2007	<	6.7	<	6	<	9	0.99	0.0029	<	0.029	AA	0.0049
6/4/2007	<	5.2	<	6	<	9	1.44	0.0053	<	0.037	AA	0.0088
6/11/2007	<	4.7	<	6	<	9	0.81	0.0035	<	0.039	AA	0.0058
6/18/2007	<	8.2	<	7	<	9	0.79	0.0011	<	0.015	AA	0.0018
6/25/2007	<	6.5	<	6	<	9	0.97	0.0064	<	0.061	AA	0.0106
Total	<	83.2	<	85	<	119	14.16	0.0893	<	0.858	AA	0.1489
Average	<	6.4	<	7	<	9	1.09	0.0069	<	0.066	AA	0.0115
Maximum	<	8.2	<	8	<	9	1.51	0.0187	<	0.198	AA	0.0312
Minimum	<	4.7	<	6	<	9	0.79	0.0011	<	0.015	AA	0.0018

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002060507	< 0.029	< 0.155	< 0.073	< 0.085

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations						Loadings				
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi		Tc mCi	U kg
4/2/2007		12.7	41		51	11.90	0.079	0.255		0.317	0.074
4/9/2007		10.6	17		16	8.72	0.068	0.106		0.104	0.056
4/16/2007		7.5	28		20	7.66	0.051	0.191		0.135	0.052
4/23/2007		7.3	91		121	6.22	0.034	0.424		0.565	0.029
4/30/2007		11.8	48		63	5.38	0.057	0.232		0.307	0.026
5/7/2007	<	5.0	13	<	9	2.60	0.028	0.071	<	0.051	0.014
5/14/2007		5.7	27		37	3.48	0.024	0.115		0.156	0.015
5/21/2007		10.4	25		13	4.62	0.052	0.126		0.066	0.023
5/28/2007		6.7	11	<	9	2.94	0.031	0.053	<	0.042	0.014
6/4/2007		4.9	22		18	3.06	0.025	0.110		0.088	0.015
6/11/2007		6.3	16	<	9	2.56	0.031	0.079	<	0.046	0.013
6/18/2007	<	7.0	33		50	2.16	0.033	0.159		0.236	0.010
6/25/2007	<	5.5	27		30	3.18	0.037	0.180		0.200	0.021
Total	<	101.4	398	<	445	64.48	0.551	2.099	<	2.313	0.363
Average	<	7.8	31	<	34	4.96	0.042	0.161	<	0.178	0.028
Maximum		12.7	91		121	11.90	0.079	0.424		0.565	0.074
Minimum		4.9	11	<	9	2.16	0.024	0.053	<	0.042	0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003060507	< 0.072	< 0.228	< 0.093	< 0.129

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/2/2007	<	5.0	18	<	9	0.55	0.0078	0.43	AA	0.013
4/9/2007	<	5.3	18	<	9	0.47	0.0065	0.43	AA	0.011
4/16/2007	<	5.1	19	<	9	0.61	0.0082	0.42	AA	0.014
4/23/2007	<	4.4	16	<	9	0.55	0.0071	0.34	AA	0.012
4/30/2007	<	4.4	20	<	9	0.52	0.0067	0.43	AA	0.011
5/7/2007	<	4.4	19	<	9	0.58	0.0073	0.39	AA	0.012
5/14/2007	<	4.5	18	<	9	0.59	0.0079	0.40	AA	0.013
5/21/2007	<	5.1	20	<	9	0.43	0.0065	0.50	AA	0.011
5/28/2007	<	5.5	19	<	9	0.51	0.0065	0.40	AA	0.011
6/4/2007	<	4.1	14	<	9	0.73	0.0095	0.31	AA	0.016
6/11/2007	<	4.0	18	<	9	0.54	0.0075	0.42	AA	0.013
6/18/2007	<	6.5	16	<	9	0.50	0.0070	0.37	AA	0.012
6/25/2007	<	5.1	18	<	9	0.52	0.0071	0.42	AA	0.012
Total	<	63.4	233	<	118	7.10	0.0955	5.27	AA	0.159
Average	<	4.9	18	<	9	0.55	0.0073	0.41	AA	0.012
Maximum	<	6.5	20	<	9	0.73	0.0095	0.50	AA	0.016
Minimum	<	4.0	14	<	9	0.43	0.0065	0.31	AA	0.011

Transuranics		Am 241		Np 237		Pu 238		Pu 239+240
'004060507	<	0.102	<	0.174	<	0.073	<	0.024

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/2/2007	AL	AL	AL	AL	AL	AL	AL	AL
4/9/2007	AL	AL	AL	AL	AL	AL	AL	AL
4/16/2007	AL	AL	AL	AL	AL	AL	AL	AL
4/23/2007	AL	AL	AL	AL	AL	AL	AL	AL
4/30/2007	AL	AL	AL	AL	AL	AL	AL	AL
5/7/2007	AL	AL	AL	AL	AL	AL	AL	AL
5/14/2007	AL	AL	AL	AL	AL	AL	AL	AL
5/21/2007	AL	AL	AL	AL	AL	AL	AL	AL
5/28/2007	AL	AL	AL	AL	AL	AL	AL	AL
6/4/2007	AL	AL	AL	AL	AL	AL	AL	AL
6/11/2007	AL	AL	AL	AL	AL	AL	AL	AL
6/18/2007	AL	AL	AL	AL	AL	AL	AL	AL
6/25/2007	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/2/2007	< 6.3	10	< 9	6.56	0.054	0.139	AA	0.091
4/9/2007	< 6.1	7	< 9	5.62	0.026	0.051	AA	0.043
4/16/2007	< 5.5	< 7	< 9	5.13	0.055	< 0.126	AA	0.091
4/23/2007	< 4.8	< 5	< 9	5.95	0.016	< 0.024	AA	0.027
4/30/2007	5.5	< 7	< 9	5.10	0.037	< 0.050	AA	0.034
5/7/2007	< 4.7	< 8	< 9	4.42	0.020	< 0.056	AA	0.033
5/14/2007	< 4.6	< 8	< 9	4.54	0.010	< 0.027	AA	0.016
5/21/2007	< 5.2	< 7	< 9	4.30	0.016	< 0.044	AA	0.026
5/28/2007	6.5	< 6	< 9	4.05	0.021	< 0.018	AA	0.013
6/4/2007	4.4	< 6	< 9	4.28	0.017	< 0.023	AA	0.017
6/11/2007	5.0	< 5	< 9	3.57	0.030	< 0.032	AA	0.022
6/18/2007	< 6.3	< 6	< 9	3.67	0.014	< 0.040	AA	0.023
6/25/2007	< 5.2	6	< 9	3.94	0.017	0.042	AA	0.028
Total	< 70.1	< 88	< 119	61.13	0.332	< 0.674	AA	0.463
Average	< 5.4	< 7	< 9	4.70	0.026	< 0.052	AA	0.036
Maximum	6.5	10	< 9	6.56	0.055	0.139	AA	0.091
Minimum	4.4	< 5	< 9	3.57	0.010	< 0.018	AA	0.013

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009060507	< 0.069	< 0.135	< 0.055	0.080

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/2/2007	<	5.5	<	6	<	9	2.91	0.0212	<	0.067	AA	0.0353
4/9/2007	<	5.9	<	5	<	9	2.51	0.0121	<	0.042	AA	0.0201
4/16/2007	<	6.0	<	7	<	9	2.06	0.0148	<	0.087	AA	0.0247
4/23/2007	<	4.7	<	5	<	9	2.37	0.0085	<	0.032	AA	0.0142
4/30/2007	<	4.6	<	7	<	9	1.82	0.0072	<	0.049	AA	0.0120
5/7/2007	<	4.3	<	8	<	9	1.18	0.0056	<	0.060	AA	0.0094
5/14/2007	<	4.5	<	8	<	9	1.36	0.0041	<	0.038	AA	0.0068
5/21/2007	<	5.1	<	7	<	9	1.39	0.0045	<	0.039	AA	0.0075
5/28/2007	<	5.4	<	6	<	9	1.12	0.0032	<	0.027	AA	0.0053
6/4/2007	<	4.1	<	6	<	9	1.18	0.0037	<	0.031	AA	0.0062
6/11/2007	<	3.8	<	5	<	9	1.08	0.0040	<	0.033	AA	0.0066
6/18/2007	<	6.3	<	6	<	9	1.12	0.0033	<	0.031	AA	0.0055
6/25/2007	<	4.7	<	5	<	9	1.66	0.0083	<	0.044	AA	0.0138
Total	<	64.9	<	82	<	119	21.76	0.1005	<	0.579	AA	0.1674
Average	<	5.0	<	6	<	9	1.67	0.0077	<	0.045	AA	0.0129
Maximum	<	6.3	<	8	<	9	2.91	0.0212	<	0.087	AA	0.0353
Minimum	<	3.8	<	5	<	9	1.08	0.0032	<	0.027	AA	0.0053

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010060507	< 0.065	< 0.085	< 0.048	< 0.048

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/2/2007	<	5.6	<	6	<	9	1.41	0.00044	<	0.0029	AA	0.00074
4/9/2007	<	5.9	<	5	<	9	1.29	0.00021	<	0.0014	AA	0.00035
4/16/2007	<	5.2	<	7	<	9	1.06	0.00052	<	0.0058	AA	0.00086
4/23/2007	<	4.8	<	5	<	9	1.22	0.00011	<	0.0008	AA	0.00019
4/30/2007	<	4.6	<	7	<	9	1.02	0.00012	<	0.0014	AA	0.00020
5/7/2007	<	4.6	<	8	<	9	0.99	0.00017	<	0.0022	AA	0.00029
5/14/2007	<	4.7		8	<	9	1.09	0.00008		0.0010	AA	0.00013
5/21/2007	<	5.3	<	7	<	9	1.04	0.00006	<	0.0007	AA	0.00010
5/28/2007	<	5.7		6	<	9	1.21	0.00006		0.0005	AA	0.00010
6/4/2007	<	4.2	<	6	<	9	1.27	0.00007	<	0.0005	AA	0.00012
6/11/2007	<	3.8		6	<	9	0.82	0.00007		0.0009	AA	0.00012
6/18/2007	<	6.5	<	7	<	9	0.93	0.00006	<	0.0007	AA	0.00011
6/25/2007	<	4.8	<	5	<	9	0.82	0.00020	<	0.0022	AA	0.00034
Total	<	65.7	<	83	<	119	14.17	0.00218	<	0.0211	AA	0.00364
Average	<	5.1	<	6	<	9	1.09	0.00017	<	0.0016	AA	0.00028
Maximum	<	6.5		8	<	9	1.41	0.00052	<	0.0058	AA	0.00086
Minimum	<	3.8	<	5	<	9	0.82	0.00006	<	0.0005	AA	0.00010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011060507	< 0.024	< 0.076	< 0.052	< 0.105

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
4/2/2007	<	3.0	<	5	<	9	1.18	0.00696	<	0.0470	AA	0.01160
4/9/2007	<	3.9	<	5	<	9	0.86	0.00250	<	0.0256	AA	0.00417
4/16/2007	<	3.9	<	5	<	9	0.82	0.00659	<	0.0710	AA	0.01099
4/23/2007	<	3.8	<	5	<	9	0.71	0.00104	<	0.0129	AA	0.00173
4/30/2007	<	5.0	<	8	<	9	1.11	0.00174	<	0.0195	AA	0.00290
5/7/2007	<	4.3	<	7	<	9	0.98	0.00302	<	0.0375	AA	0.00504
5/14/2007	<	2.8	<	5	<	10	0.94	0.00066	<	0.0058	AA	0.00110
5/21/2007	<	3.0		6	<	9	1.16	0.00070		0.0056	AA	0.00116
5/28/2007	<	3.0		7	<	9	1.28	0.00051		0.0047	AA	0.00085
6/4/2007	<	2.9	<	5	<	9	1.43	0.00072	<	0.0042	AA	0.00121
6/11/2007	<	6.4	<	6	<	9	1.35	0.00104	<	0.0071	AA	0.00173
6/18/2007	<	6.2	<	6	<	9	1.17	0.00034	<	0.0026	AA	0.00056
6/25/2007	<	6.5	<	7	<	9	0.90	0.00119	<	0.0157	AA	0.00199
Total	<	54.7	<	76	<	121	13.89	0.02702	<	0.2591	AA	0.04503
Average	<	4.2	<	6	<	9	1.07	0.00208	<	0.0199	AA	0.00346
Maximum	<	6.5	<	8	<	10	1.43	0.00696	<	0.0710	AA	0.01160
Minimum	<	2.8	<	5	<	9	0.71	0.00034	<	0.0026	AA	0.00056

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
4/2/2007	< 3.7	5	< 9	1.24	0.00653	0.0430	AA	0.01088
4/9/2007	< 5.0	< 5	< 9	1.17	0.00243	< 0.0188	AA	0.00405
4/16/2007	< 4.8	< 5	< 9	1.12	0.00741	< 0.0594	AA	0.01235
4/23/2007	< 4.5	6	< 9	1.24	0.00130	0.0096	AA	0.00216
4/30/2007	< 5.1	< 8	< 9	1.28	0.00721	< 0.0702	AA	0.01201
5/7/2007	< 5.3	< 8	< 9	1.09	0.00185	< 0.0213	AA	0.00308
5/14/2007	< 3.1	< 5	< 10	0.77	0.00044	< 0.0047	AA	0.00074
5/21/2007	< 3.4	5	< 9	1.04	0.00085	0.0069	AA	0.00141
5/28/2007	3.8	< 5	< 9	1.23	0.00222	< 0.0030	AA	0.00073
6/4/2007	< 3.5	5	< 9	1.27	0.00064	0.0044	AA	0.00107
6/11/2007	< 7.1	< 6	< 9	0.84	0.00080	< 0.0089	AA	0.00133
6/18/2007	< 6.8	< 6	< 9	0.71	0.00015	< 0.0019	AA	0.00025
6/25/2007	< 6.6	< 7	< 9	0.45	0.00074	< 0.0197	AA	0.00124
Total	< 62.7	< 75	< 121	13.45	0.03255	< 0.2719	AA	0.05129
Average	< 4.8	< 6	< 9	1.03	0.00250	< 0.0209	AA	0.00395
Maximum	< 7.1	< 8	< 10	1.28	0.00741	< 0.0702	AA	0.01235
Minimum	< 3.1	< 5	< 9	0.45	0.00015	< 0.0019	AA	0.00025

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 2nd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May, 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because the analytical method used cannot distingush them.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDA/LLDs vary somewhat from sample to sample depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, 011, 012 and 013 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	< 3.4	< 5	< 9	0.36	0.051	< 0.221	< 0.37	0.0150
7/9/2007	< 6.3	6	< 10	0.44	0.058	0.217	< 0.37	0.0169
7/16/2007	< 4.6	< 6	< 9	0.35	0.053	< 0.246	< 0.40	0.0155
7/23/2007	< 2.5	< 5	< 9	0.62	0.095	< 0.238	< 0.40	0.0277
7/30/2007	< 4.6	< 8	< 9	0.38	0.056	< 0.326	< 0.40	0.0163
8/6/2007	< 4.8	7	< 9	0.17	0.027	0.340	< 0.41	0.0078
8/13/2007	< 5.8	< 6	< 9	0.19	0.028	< 0.250	< 0.38	0.0081
8/20/2007	< 3.7	< 5	< 9	0.19	0.027	< 0.206	< 0.37	0.0079
8/27/2007	5.9	6	< 9	0.33	0.262	0.262	< 0.39	0.0147
9/3/2007	< 4.6	< 6	< 9	0.19	0.022	< 0.185	< 0.31	0.0065
9/10/2007	< 6.2	< 6	< 9	0.15	0.019	< 0.214	< 0.32	0.0056
9/17/2007	< 4.5	< 6	< 8	0.36	0.045	< 0.204	< 0.28	0.0132
9/24/2007	< 3.8	< 5	< 9	0.24	0.029	< 0.170	< 0.31	0.0084
Total	< 60.7	< 75	< 116	3.97	0.771	< 3.079	< 4.70	0.1635
Average	< 4.7	< 6	< 9	0.31	0.059	< 0.237	< 0.36	0.0126
Maximum	< 6.3	< 8	< 10	0.62	0.262	0.340	< 0.41	0.0277
Minimum	< 2.5	< 5	< 8	0.15	0.019	< 0.170	< 0.28	0.0056

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'001080107	< 0.093	< 0.108	< 0.082	< 0.056

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	< 5.7	< 6	< 9	0.88	0.0055	< 0.058	AA	0.0091
7/9/2007	< 8.5	5	< 10	0.64	0.0031	0.042	AA	0.0052
7/16/2007	< 6.3	< 6	< 9	0.60	0.0026	< 0.042	AA	0.0043
7/23/2007	< 3.5	< 6	< 9	0.80	0.0045	< 0.051	AA	0.0074
7/30/2007	< 6.2	8	< 9	0.80	0.0047	0.077	AA	0.0078
8/6/2007	< 6.6	< 5	< 9	0.63	0.0032	< 0.042	AA	0.0054
8/13/2007	< 7.5	< 6	< 9	0.47	0.0015	< 0.032	AA	0.0025
8/20/2007	< 5.1	6	< 9	0.52	0.0029	0.055	AA	0.0048
8/27/2007	< 6.5	< 6	< 9	0.45	0.0047	< 0.102	AA	0.0078
9/3/2007	< 6.1	< 6	< 9	0.56	0.0031	< 0.053	AA	0.0052
9/10/2007	< 8.1	< 6	< 9	0.52	0.0029	< 0.057	AA	0.0049
9/17/2007	< 6.0	< 6	< 8	0.65	0.0047	< 0.068	AA	0.0078
9/24/2007	< 5.3	< 5	< 9	0.64	0.0032	< 0.042	AA	0.0053
Total	< 81.4	< 75	< 116	8.16	0.0465	< 0.721	AA	0.0775
Average	< 6.3	< 6	< 9	0.63	0.0036	< 0.055	AA	0.0060
Maximum	< 8.5	8	< 10	0.88	0.0055	< 0.102	AA	0.0091
Minimum	< 3.5	< 5	< 8	0.45	0.0015	< 0.032	AA	0.0025

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'002080107	< 0.066	< 0.132	< 0.054	< 0.054

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations					Loadings			
		Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007		9.2	37	36	5.04	0.055	0.22	0.22	0.030
7/9/2007	<	8.3	31	19	9.00	0.041	0.15	0.09	0.044
7/16/2007	<	5.7	100	129	2.80	0.035	0.61	0.78	0.017
7/23/2007		6.1	54	68	3.98	0.038	0.34	0.42	0.025
7/30/2007		7.0	32	41	2.81	0.048	0.22	0.28	0.019
8/6/2007	<	5.6	131	191	1.86	0.040	0.94	1.37	0.013
8/13/2007	<	6.6	33	53	1.75	0.045	0.25	0.40	0.013
8/20/2007	<	4.4	75	111	2.23	0.032	0.54	0.81	0.016
8/27/2007		6.2	272	347	2.36	0.053	2.32	2.95	0.020
9/3/2007	<	5.7	162	229	4.09	0.041	1.15	1.63	0.029
9/10/2007	<	7.5	137	196	2.21	0.052	0.95	1.37	0.015
9/17/2007	<	5.6	168	240	4.35	0.026	0.80	1.14	0.021
9/24/2007	<	4.5	119	186	3.08	0.022	0.58	0.91	0.015
Total	<	82.4	1350	1845	45.56	0.528	9.07	12.37	0.279
Average	<	6.3	104	142	3.50	0.041	0.70	0.95	0.021
Maximum		9.2	272	347	9.00	0.055	2.32	2.95	0.044
Minimum	<	4.4	31	19	1.75	0.022	0.15	0.09	0.013

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'003080107	< 0.070	< 0.105	< 0.084	< 0.075

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations							Loadings			
		Alpha pCi/l	Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	<	4.6	22	<	9	0.48	0.0058	0.44	AA	0.010
7/9/2007	<	7.0	23	<	10	0.50	0.0070	0.53	AA	0.012
7/16/2007	<	5.1	19	<	9	0.45	0.0063	0.43	AA	0.010
7/23/2007	<	2.8	19	<	9	0.56	0.0064	0.36	AA	0.011
7/30/2007	<	5.3	18	<	9	0.57	0.0070	0.36	AA	0.012
8/6/2007	<	5.4	23	<	9	0.42	0.0060	0.55	AA	0.010
8/13/2007	<	6.2	15	<	9	0.43	0.0070	0.42	AA	0.012
8/20/2007	<	4.0	19	<	9	0.46	0.0085	0.58	AA	0.014
8/27/2007	<	5.4	17	<	9	0.43	0.0074	0.48	AA	0.012
9/3/2007	<	4.9	15	<	9	0.37	0.0067	0.45	AA	0.011
9/10/2007	<	6.6	16	<	9	0.38	0.0060	0.42	AA	0.010
9/17/2007	<	4.9	19	<	8	0.54	0.0076	0.46	AA	0.013
9/24/2007	<	4.2	21	<	9	0.45	0.0067	0.52	AA	0.011
Total	<	66.4	245	<	116	6.04	0.0884	6.01	AA	0.147
Average	<	5.1	19	<	9	0.46	0.0068	0.46	AA	0.011
Maximum	<	7.0	23	<	10	0.57	0.0085	0.58	AA	0.014
Minimum	<	2.8	15	<	8	0.37	0.0058	0.36	AA	0.010

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'004080107	< 0.056	< 0.065	< 0.028	< 0.075

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	AL	AL	AL	AL	AL	AL	AL	AL
7/9/2007	AL	AL	AL	AL	AL	AL	AL	AL
7/16/2007	AL	AL	AL	AL	AL	AL	AL	AL
7/23/2007	AL	AL	AL	AL	AL	AL	AL	AL
7/30/2007	AL	AL	AL	AL	AL	AL	AL	AL
8/6/2007	AL	AL	AL	AL	AL	AL	AL	AL
8/13/2007	AL	AL	AL	AL	AL	AL	AL	AL
8/20/2007	AL	AL	AL	AL	AL	AL	AL	AL
8/27/2007	AL	AL	AL	AL	AL	AL	AL	AL
9/3/2007	AL	AL	AL	AL	AL	AL	AL	AL
9/10/2007	AL	AL	AL	AL	AL	AL	AL	AL
9/17/2007	AL	AL	AL	AL	AL	AL	AL	AL
9/24/2007	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/2/2007	<	4.6	<	6	<	9	5.49	0.034	<	0.057	AA	0.057
7/9/2007	<	7.0		6	<	10	5.18	0.025		0.051	AA	0.042
7/16/2007		5.3	<	6	<	9	4.20	0.042	<	0.044	AA	0.033
7/23/2007		7.0	<	5	<	9	4.65	0.072	<	0.056	AA	0.048
7/30/2007	<	5.0	<	8	<	9	4.97	0.027	<	0.067	AA	0.044
8/6/2007	<	5.1		5	<	9	4.59	0.019		0.037	AA	0.031
8/13/2007	<	6.0	<	6	<	9	4.04	0.012	<	0.030	AA	0.021
8/20/2007		4.6		6	<	9	3.23	0.027		0.035	AA	0.019
8/27/2007	<	5.1		6	<	9	2.87	0.022		0.079	AA	0.036
9/3/2007	<	4.8	<	6	<	9	3.64	0.010	<	0.026	AA	0.017
9/10/2007	<	6.4	<	6	<	9	3.87	0.018	<	0.045	AA	0.029
9/17/2007	<	4.7		7	<	8	5.02	0.029		0.065	AA	0.048
9/24/2007	<	3.9	<	5	<	9	4.23	0.011	<	0.021	AA	0.018
Total	<	69.5	<	77	<	116	55.98	0.347	<	0.612	AA	0.443
Average	<	5.3	<	6	<	9	4.31	0.027	<	0.047	AA	0.034
Maximum		7.0	<	8	<	10	5.49	0.072		0.079	AA	0.057
Minimum	<	3.9	<	5	<	8	2.87	0.010	<	0.021	AA	0.017

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'009080107	< 0.122	< 0.063	< 0.050	< 0.072

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
7/2/2007	<	4.4		6	<	9	2.31	0.0089		0.036	AA	0.0148
7/9/2007	<	6.7	<	5	<	10	1.81	0.0079	<	0.036	AA	0.0132
7/16/2007	<	4.9	<	6	<	9	1.31	0.0054	<	0.038	AA	0.0089
7/23/2007		2.9	<	5	<	9	1.80	0.0237	<	0.044	AA	0.0148
7/30/2007	<	5.0	<	8	<	9	1.42	0.0070	<	0.062	AA	0.0117
8/6/2007	<	5.2		5	<	9	1.17	0.0039		0.027	AA	0.0064
8/13/2007	<	6.1		6	<	9	1.19	0.0034		0.030	AA	0.0056
8/20/2007	<	3.9		6	<	9	0.89	0.0026		0.028	AA	0.0044
8/27/2007	<	5.2	<	6	<	9	1.04	0.0066	<	0.061	AA	0.0110
9/3/2007	<	4.9	<	6	<	9	1.19	0.0035	<	0.027	AA	0.0058
9/10/2007	<	6.6	<	6	<	9	0.69	0.0024	<	0.035	AA	0.0041
9/17/2007	<	4.4	<	6	<	8	1.30	0.0071	<	0.050	AA	0.0118
9/24/2007	<	4.0	<	5	<	9	0.99	0.0028	<	0.023	AA	0.0047
Total	<	64.2	<	74	<	116	17.11	0.0852	<	0.498	AA	0.1173
Average	<	4.9	<	6	<	9	1.32	0.0066	<	0.038	AA	0.0090
Maximum	<	6.7	<	8	<	10	2.31	0.0237	<	0.062	AA	0.0148
Minimum	<	2.9	<	5	<	8	0.69	0.0024	<	0.023	AA	0.0041

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'010080107	< 0.083	< 0.1201	< 0.061	< 0.061

Plant Radiological Discharges to Surface Water
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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	< 4.4	< 6	< 9	1.28	0.0001	< 0.0006	AA	0.0001
7/9/2007	< 7.2	6	< 10	1.62	0.0002	0.0013	AA	0.0003
7/16/2007	< 4.7	< 6	< 9	0.72	0.0001	< 0.0008	AA	0.0001
7/23/2007	4.0	6	< 9	1.62	0.0009	0.0013	AA	0.0004
7/30/2007	< 5.0	< 8	< 9	1.38	0.0001	< 0.0013	AA	0.0002
8/6/2007	< 5.7	8	< 9	1.89	0.0001	0.0010	AA	0.0002
8/13/2007	< 6.9	< 6	< 9	2.22	0.0001	< 0.0002	AA	0.0001
8/20/2007	8.6	7	< 9	1.64	0.0004	0.0003	AA	0.0001
8/27/2007	< 5.1	< 6	< 9	0.87	0.0001	< 0.0014	AA	0.0002
9/3/2007	< 5.5	< 6	< 9	2.11	0.0000	< 0.0001	AA	0.0001
9/10/2007	< 7.4	6	< 9	2.06	0.0002	0.0011	AA	0.0004
9/17/2007	< 4.7	< 6	< 8	1.33	0.0000	< 0.0003	AA	0.0001
9/24/2007	< 4.5	7	< 9	1.91	0.0001	0.0004	AA	0.0001
Total	< 73.7	< 81	< 116	20.65	0.0025	< 0.0102	AA	0.0024
Average	< 5.7	< 6	< 9	1.59	0.0002	< 0.0008	AA	0.0002
Maximum	8.6	8	< 10	2.22	0.0009	0.0014	AA	0.0004
Minimum	4.0	< 6	< 8	0.72	0.0000	< 0.0001	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
'011080107	< 0.026	< 0.132	< 0.061	< 0.018

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	< 6.3	< 7	< 9	0.92	0.0007	< 0.0086	AA	0.0011
7/9/2007	< 6.4	< 7	< 9	0.85	0.0008	< 0.0105	AA	0.0013
7/16/2007	< 4.1	< 5	< 9	0.89	0.0006	< 0.0053	AA	0.0010
7/23/2007	< 4.0	< 5	< 9	0.82	0.0012	< 0.0115	AA	0.0020
7/30/2007	< 3.9	6	< 9	0.88	0.0008	0.0091	AA	0.0013
8/6/2007	< 4.4	< 5	< 9	0.93	0.0004	< 0.0034	AA	0.0006
8/13/2007	< 4.4	< 5	< 9	1.06	0.0002	< 0.0018	AA	0.0003
8/20/2007	< 4.4	< 5	< 9	0.92	0.0004	< 0.0042	AA	0.0007
8/27/2007	< 5.3	< 6	< 9	0.54	0.0007	< 0.0134	AA	0.0012
9/3/2007	< 5.3	< 6	< 9	0.50	0.0001	< 0.0027	AA	0.0002
9/10/2007	< 5.6	< 6	< 9	0.62	0.0005	< 0.0083	AA	0.0009
9/17/2007	< 5.3	< 6	< 9	0.57	0.0003	< 0.0053	AA	0.0005
9/24/2007	< 5.4	< 6	< 9	0.63	0.0001	< 0.0018	AA	0.0002
Total	< 64.8	< 76	< 120	10.13	0.0068	< 0.0859	AA	0.0113
Average	< 5.0	< 6	< 9	0.78	0.0005	< 0.0066	AA	0.0009
Maximum	< 6.4	< 7	< 9	1.06	0.0012	< 0.0134	AA	0.0020
Minimum	< 3.9	< 5	< 9	0.50	0.0001	< 0.0018	AA	0.0002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
7/2/2007	< 6.6	< 7	< 9	0.42	0.0006	< 0.0158	AA	0.0009
7/9/2007	< 6.6	7	< 9	0.46	0.0005	0.0141	AA	0.0009
7/16/2007	< 4.2	6	< 9	0.45	0.0005	0.0124	AA	0.0009
7/23/2007	< 4.1	5	< 9	0.39	0.0008	0.0185	AA	0.0013
7/30/2007	< 4.0	< 5	< 9	0.46	0.0007	< 0.0124	AA	0.0012
8/6/2007	< 4.4	< 5	< 9	0.47	0.0004	< 0.0068	AA	0.0006
8/13/2007	< 4.6	< 5	< 9	0.59	0.0002	< 0.0027	AA	0.0003
8/20/2007	< 4.7	< 5	< 9	0.52	0.0004	< 0.0063	AA	0.0006
8/27/2007	< 5.3	< 6	< 9	0.25	0.0006	< 0.0230	AA	0.0010
9/3/2007	< 5.5	< 6	< 9	0.24	0.0001	< 0.0027	AA	0.0001
9/10/2007	< 5.7	< 6	< 9	0.31	0.0003	< 0.0085	AA	0.0005
9/17/2007	< 5.1	< 6	< 9	0.20	0.0002	< 0.0083	AA	0.0003
9/24/2007	< 5.2	< 6	< 9	0.33	0.0001	< 0.0019	AA	0.0001
Total	< 66.0	< 77	< 120	5.09	0.0052	< 0.1334	AA	0.0087
Average	< 5.1	< 6	< 9	0.39	0.0004	< 0.0103	AA	0.0007
Maximum	< 6.6	7	< 9	0.59	0.0008	< 0.0230	AA	0.0013
Minimum	< 4.0	< 5	< 9	0.20	0.0001	< 0.0019	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
NA				

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 3rd Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May, 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because the analytical method used cannot distingush them.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDA/LLDs vary somewhat from sample to sample depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, 011, 012 and 013 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 001 / X-230J-7 East Holding Pond

	Concentrations								Loadings							
		Alpha pCi/l		Beta pCi/l		Tc pCi/l		U ug/l		Alpha mCi		Beta mCi		Tc mCi		U kg
10/1/2007	<	3.2		5	<	9		0.31		0.04		0.20	<	0.36		0.011
10/8/2007	<	4.2	<	7	<	9		0.22		0.03	<	0.27	<	0.34		0.008
10/15/2007	<	4.7		6	<	7		0.15		0.02		0.22	<	0.28		0.006
10/22/2007		2.2		7	<	9		0.34		0.08		0.26	<	0.34		0.013
10/29/2007	<	5.6		10	<	9		0.74		0.12		0.45	<	0.42		0.034
11/5/2007	<	3.8		6	<	9		0.25		0.03		0.16	<	0.27		0.008
11/12/2007	<	5.9	<	5	<	9		0.28		0.03	<	0.17	<	0.30		0.009
11/19/2007	<	2.7	<	5	<	9		0.33		0.03	<	0.15	<	0.27		0.010
11/26/2007	<	5.4	<	7	<	9		0.50		0.07	<	0.28	<	0.36		0.021
12/3/2007	<	5.3		16		19		1.01		0.14		0.64		0.76		0.041
12/10/2007		5.7		15		20		1.73		0.31		0.82		1.10		0.094
12/17/2007		7.5		56		63		2.26		0.29		2.13		2.39		0.086
12/24/2007	<	4.4		48		57		1.36		0.11		1.20		1.42		0.034
12/31/2007	<	5.2		13		9		1.25		0.08		0.24		0.18		0.024
Total	<	65.8	<	205	<	246		10.73		1.38	<	7.20	<	8.76		0.399
Average	<	4.7	<	15	<	18		0.77		0.10	<	0.51	<	0.63		0.028
Maximum		7.5		56		63		2.26		0.31		2.13		2.39		0.094
Minimum	<	2.2	<	5	<	7		0.15		0.02	<	0.15		0.18		0.006

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
001120407	< 0.101	< 0.137	< 0.076	< 0.107

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United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 002 / X-230K South Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/1/2007	<	4.5	<	5	<	10	0.68	0.004	<	0.05	AA	0.007
10/8/2007	<	5.7		8	<	9	0.20	0.000		0.03	AA	0.001
10/15/2007	<	6.5	<	5	<	7	0.80	0.004	<	0.05	AA	0.007
10/22/2007		5.2	<	5	<	9	0.54	0.079	<	0.08	AA	0.008
10/29/2007	<	7.5	<	8	<	9	0.61	0.007	<	0.15	AA	0.012
11/5/2007	<	5.4		6	<	9	0.53	0.003		0.06	AA	0.005
11/12/2007	<	8.5	<	6	<	9	0.62	0.002	<	0.04	AA	0.004
11/19/2007	<	3.9		9	<	9	0.50	0.002		0.04	AA	0.003
11/26/2007	<	8.0	<	7	<	9	0.51	0.003	<	0.07	AA	0.005
12/3/2007	<	7.3	<	7	<	9	0.56	0.008	<	0.18	AA	0.014
12/10/2007	<	6.1	<	5	<	9	0.65	0.010	<	0.13	AA	0.016
12/17/2007	<	3.6		6	<	9	0.78	0.020		0.25	AA	0.033
12/24/2007	<	6.4	<	6	<	10	1.00	0.005	<	0.04	AA	0.008
12/31/2007	<	7.9	<	6	<	9	1.02	0.005	<	0.05	AA	0.009
Total	<	86.5	<	88	<	124	9.00	0.152	<	1.21	AA	0.131
Average	<	6.2	<	6	<	9	0.64	0.011	<	0.09	AA	0.009
Maximum	<	8.5		9	<	10	1.02	0.079		0.25	AA	0.033
Minimum	<	3.6	<	5	<	7	0.20	0.000		0.03	AA	0.001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
002120407	< 0.080	< 0.112	< 0.095	< 0.119

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 003 / X-6619 Sewage Treatment Plant

	Concentrations					Loadings			
		Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/1/2007		5.2	137	171	2.63	0.03	0.69	0.86	0.013
10/8/2007		5.2	128	174	2.91	0.02	0.58	0.78	0.013
10/15/2007	<	5.6	148	188	2.51	0.03	0.73	0.93	0.012
10/22/2007		5.4	133	181	1.90	0.04	0.87	1.19	0.012
10/29/2007	<	6.8	147	221	4.08	0.06	1.30	1.96	0.036
11/5/2007		5.4	155	218	2.94	0.03	0.91	1.29	0.017
11/12/2007	<	7.3	180	237	2.47	0.04	1.10	1.45	0.015
11/19/2007		3.9	221	297	1.69	0.02	1.39	1.87	0.011
11/26/2007		7.4	199	284	2.91	0.05	1.33	1.90	0.019
12/3/2007	<	6.5	173	223	4.12	0.05	1.31	1.69	0.031
12/10/2007	<	5.8	155	212	5.42	0.05	1.29	1.77	0.045
12/17/2007		19.7	242	364	9.84	0.19	2.29	3.44	0.093
12/24/2007		9.5	144	197	7.46	0.07	1.00	1.37	0.052
12/31/2007		7.0	142	223	6.59	0.04	0.88	1.38	0.041
Total	<	100.7	2304	3190	57.47	0.72	15.68	21.88	0.412
Average	<	7.2	165	228	4.11	0.05	1.12	1.56	0.029
Maximum		19.7	242	364	9.84	0.19	2.29	3.44	0.093
Minimum		3.9	128	171	1.69	0.02	0.58	0.78	0.011

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
003120407	< 0.036	< 0.122	< 0.080	< 0.104

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 004 / Cooling Tower Blowdown

	Concentrations				**Loadings**				
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi		U kg
10/1/2007	< 3.6	19	< 9	0.39	0.0060	0.48	AA	0	0.010
10/8/2007	< 4.6	17	< 9	0.34	0.0047	0.40	AA	0	0.008
10/15/2007	< 4.9	20	< 7	0.46	0.0075	0.55	AA	0	0.013
10/22/2007	< 1.1	15	< 9	0.35	0.0059	0.43	AA	0	0.010
10/29/2007	< 6.1	16	< 9	0.29	0.0049	0.47	AA	0	0.008
11/5/2007	< 4.2	13	< 9	0.29	0.0049	0.37	AA	0	0.008
11/12/2007	< 6.4	13	< 9	0.33	0.0055	0.37	AA	0	0.009
11/19/2007	< 2.9	19	< 9	0.50	0.0032	0.20	AA	0	0.005
11/26/2007	< 6.0	22	< 9	0.32	0.0002	0.02	AA	0	0.000
12/3/2007	< 5.9	20	< 9	0.31	0.0036	0.37	AA	0	0.006
12/10/2007	< 5.1	16	< 9	0.30	0.0007	0.06	AA	0	0.001
12/17/2007	< 3.0	16	< 9	0.36	0.0041	0.30	AA	0	0.007
12/24/2007	< 5.0	19	< 9	0.32	0.0017	0.17	AA	0	0.003
12/31/2007	< 5.6	22	< 9	0.30	0.0016	0.19	AA	0	0.003
Total	< 64.4	245	< 124	4.86	0.0545	4.38	AA		0.091
Average	< 4.6	18	< 9	0.35	0.0039	0.31	AA		0.006
Maximum	< 6.4	22	< 9	0.50	0.0075	0.55	AA		0.013
Minimum	< 1.1	13	< 7	0.29	0.0002	0.02	AA		0.000

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
004120407	< 0.077	< 0.085	< 0.095	< 0.073

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 005 / X-611B Lime Sludge Lagoon

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/1/2007	AL	AL	AL	AL	AL	AL	AL	AL
10/8/2007	AL	AL	AL	AL	AL	AL	AL	AL
10/15/2007	AL	AL	AL	AL	AL	AL	AL	AL
10/22/2007	AL	AL	AL	AL	AL	AL	AL	AL
10/29/2007	AL	AL	AL	AL	AL	AL	AL	AL
11/5/2007	AL	AL	AL	AL	AL	AL	AL	AL
11/12/2007	AL	AL	AL	AL	AL	AL	AL	AL
11/19/2007	AL	AL	AL	AL	AL	AL	AL	AL
11/26/2007	AL	AL	AL	AL	AL	AL	AL	AL
12/3/2007	AL	AL	AL	AL	AL	AL	AL	AL
12/10/2007	AL	AL	AL	AL	AL	AL	AL	AL
12/17/2007	AL	AL	AL	AL	AL	AL	AL	AL
12/24/2007	AL	AL	AL	AL	AL	AL	AL	AL
12/31/2007	AL	AL	AL	AL	AL	AL	AL	AL
Total	AL	AL	AL	AL	AL	AL	AL	AL
Average	AL	AL	AL	AL	AL	AL	AL	AL
Maximum	AL	AL	AL	AL	AL	AL	AL	AL
Minimum	AL	AL	AL	AL	AL	AL	AL	AL

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
	AL	AL	AL	AL

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 009 / X-230L North Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/1/2007	<	3.2	<	5	<	10	4.16	0.02	<	0.04	AA	0.036
10/8/2007		4.6	<	7	<	9	3.07	0.03	<	0.04	AA	0.017
10/15/2007	<	4.6		5	<	7	2.50	0.01		0.03	AA	0.014
10/22/2007		3.7		7	<	9	3.21	0.06		0.12	AA	0.054
10/29/2007	<	5.8	<	7	<	9	5.85	0.10	<	0.20	AA	0.163
11/5/2007		11.8		7	<	9	4.05	0.07		0.04	AA	0.024
11/12/2007	<	6.0	<	5	<	9	4.03	0.02	<	0.05	AA	0.038
11/19/2007		4.4		5	<	9	3.98	0.04		0.04	AA	0.035
11/26/2007	<	5.7		8	<	6	4.28	0.04		0.14	AA	0.072
12/3/2007	<	5.4		8	<	9	4.29	0.05		0.17	AA	0.089
12/10/2007		9.9		8	<	9	6.98	0.33		0.25	AA	0.231
12/17/2007		4.5		7	<	9	5.08	0.21		0.34	AA	0.241
12/24/2007		7.4		6	<	9	7.29	0.27		0.21	AA	0.270
12/31/2007		7.3		7	<	9	7.80	0.17		0.15	AA	0.178
Total	<	84.3	<	93	<	121	66.57	1.43	<	1.84	AA	1.462
Average	<	6.0	<	7	<	9	4.76	0.10	<	0.13	AA	0.104
Maximum		11.8		8	<	10	7.80	0.33		0.34	AA	0.270
Minimum	<	3.2	<	5	<	6	2.50	0.01		0.03	AA	0.014

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
009120407	< 0.097	< 0.113	< 0.074	< 0.104

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 010 / X-230J-5 Northwest Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/1/2007	<	4.4	<	5	<	10	1.19	0.01	<	0.05	AA	0.013
10/8/2007	<	4.4	<	7	<	9	0.85	0.00	<	0.03	AA	0.004
10/15/2007	<	4.9		7	<	7	0.71	0.00		0.03	AA	0.003
10/22/2007		4.5		6	<	9	1.58	0.03		0.04	AA	0.011
10/29/2007	<	5.7	<	7	<	9	2.41	0.02	<	0.11	AA	0.035
11/5/2007	<	4.0	<	5	<	9	1.38	0.00	<	0.03	AA	0.008
11/12/2007	<	6.4		6	<	9	1.51	0.00		0.03	AA	0.008
11/19/2007		4.7		6	<	9	1.70	0.03		0.03	AA	0.010
11/26/2007	<	5.7		9	<	9	1.98	0.01		0.09	AA	0.020
12/3/2007	<	5.3		9	<	9	1.84	0.02		0.13	AA	0.028
12/10/2007		5.2		6	<	9	2.53	0.08		0.10	AA	0.040
12/17/2007		5.1		7	<	9	1.86	0.10		0.13	AA	0.037
12/24/2007	<	4.8	<	5	<	9	3.19	0.02	<	0.05	AA	0.032
12/31/2007	<	5.8	<	5	<	9	3.13	0.01	<	0.04	AA	0.022
Total	<	70.9	<	89	<	124	25.86	0.35	<	0.90	AA	0.271
Average	<	5.1	<	6	<	9	1.85	0.02	<	0.06	AA	0.019
Maximum	<	6.4		9	<	10	3.19	0.10		0.13	AA	0.040
Minimum	<	4.0	<	5	<	7	0.71	0.00	<	0.03	AA	0.003

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
010120407	< 0.073	< 0.073	< 0.085	< 0.058

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 011 / X-230J-6 Northeast Holding Pond

	Concentrations								Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/1/2007	<	3.5		5	<	10	1.29	0.00015		0.0009	AA	0.0002
10/8/2007	<	4.4		8	<	9	0.75	0.00004		0.0006	AA	0.0001
10/15/2007	<	4.8	<	5	<	7	0.58	0.00005	<	0.0007	AA	0.0001
10/22/2007		2.9	<	5	<	9	0.53	0.00067	<	0.0012	AA	0.0001
10/29/2007	<	5.7	<	7	<	9	0.90	0.00036	<	0.0049	AA	0.0006
11/5/2007	<	4.0		5	<	9	0.59	0.00003		0.0005	AA	0.0001
11/12/2007	<	6.2		6	<	9	0.59	0.00004		0.0006	AA	0.0001
11/19/2007		2.9	<	5	<	9	0.54	0.00022	<	0.0004	AA	0.0000
11/26/2007	<	5.6	<	7	<	9	0.63	0.00026	<	0.0048	AA	0.0004
12/3/2007	<	5.5	<	7	<	9	0.78	0.00016	<	0.0024	AA	0.0003
12/10/2007	<	4.7		6	<	9	0.98	0.00038		0.0040	AA	0.0006
12/17/2007	<	2.8	<	5	<	9	0.93	0.00041	<	0.0037	AA	0.0007
12/24/2007	<	4.9	<	5	<	9	1.02	0.00006	<	0.0005	AA	0.0001
12/31/2007	<	5.6	<	5	<	9	0.79	0.00005	<	0.0005	AA	0.0001
Total	<	63.5	<	81	<	124	10.90	0.00288	<	0.0255	AA	0.0035
Average	<	4.5	<	6	<	9	0.78	0.00021	<	0.0018	AA	0.0002
Maximum	<	6.2		8	<	10	1.29	0.00067	<	0.0049	AA	0.0007
Minimum	<	2.8	<	5	<	7	0.53	0.00003	<	0.0004	AA	0.00004

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
011120407	< 0.072	< 0.101	< 0.071	< 0.092

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 012 / X-2230M Southwest Holding Pond

	Concentrations							Loadings					
		Alpha pCi/l		Beta pCi/l		Tc pCi/l	U ug/l	Alpha mCi		Beta mCi	Tc mCi	U kg
10/1/2007	<	5.4	<	6	<	9	0.68	0.0005	<	0.007	AA	0.0008
10/8/2007	<	5.4	<	6	<	9	0.70	0.0001	<	0.002	AA	0.0002
10/15/2007	<	5.5	<	6	<	9	0.74	0.0001	<	0.002	AA	0.0002
10/22/2007	<	5.4	<	5	<	9	0.63	0.0009	<	0.012	AA	0.0015
10/29/2007	<	5.1	<	5	<	9	0.57	0.0026	<	0.039	AA	0.0043
11/5/2007	<	5.5	<	5	<	9	0.77	0.0004	<	0.004	AA	0.0006
11/12/2007	<	4.5	<	5	<	9	0.80	0.0003	<	0.003	AA	0.0005
11/19/2007	<	4.6	<	5	<	9	0.77	0.0004	<	0.004	AA	0.0006
11/26/2007	<	4.6	<	5	<	9	0.84	0.0038	<	0.040	AA	0.0064
12/3/2007	<	3.9	<	5	<	9	0.43	0.0015	<	0.030	AA	0.0025
12/10/2007	<	1.4		6	<	9	0.48	0.0050		0.099	AA	0.0083
12/17/2007		2.4		8	<	9	0.45	0.0391		0.129	AA	0.0073
12/24/2007		2.1		5	<	9	0.80	0.0064		0.016	AA	0.0024
12/31/2007	<	6.3	<	6	<	9	1.16	0.0022	<	0.017	AA	0.0036
Total	<	62.1	<	79	<	127	9.82	0.0631	<	0.405	AA	0.0391
Average	<	4.4	<	6	<	9	0.70	0.0045	<	0.029	AA	0.0028
Maximum	<	6.3		8	<	9	1.16	0.0391		0.129	AA	0.0083
Minimum	<	1.4	<	5	<	9	0.43	0.0001	<	0.002	AA	0.0002

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
012120307	< 0.070	< 0.100	< 0.109	< 0.090

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Outfall 013 / X-2230N West Holding Pond

	Concentrations				Loadings			
	Alpha pCi/l	Beta pCi/l	Tc pCi/l	U ug/l	Alpha mCi	Beta mCi	Tc mCi	U kg
10/1/2007	< 5.4	< 6	< 9	0.31	0.0003	< 0.012	AA	0.0006
10/8/2007	< 5.4	< 6	< 9	0.30	0.0001	< 0.002	AA	0.0001
10/15/2007	< 5.6	< 6	< 9	0.36	0.0001	< 0.002	AA	0.0001
10/22/2007	< 5.4	< 5	< 9	0.35	0.0008	< 0.020	AA	0.0014
10/29/2007	< 5.3	< 5	< 9	0.48	0.0021	< 0.038	AA	0.0035
11/5/2007	< 5.7	< 5	< 9	0.73	0.0004	< 0.005	AA	0.0007
11/12/2007	< 4.8	< 5	< 9	0.81	0.0004	< 0.004	AA	0.0006
11/19/2007	< 4.3	< 5	< 9	0.76	0.0004	< 0.005	AA	0.0007
11/26/2007	< 4.9	6	< 9	0.70	0.0033	0.043	AA	0.0055
12/3/2007	< 4.1	< 5	< 9	0.50	0.0012	< 0.022	AA	0.0021
12/10/2007	1.8	6	< 9	0.64	0.0267	0.089	AA	0.0094
12/17/2007	3.4	< 5	< 9	0.78	0.0446	< 0.060	AA	0.0102
12/24/2007	3.8	< 5	< 9	1.36	0.0095	< 0.012	AA	0.0034
12/31/2007	< 7.1	< 6	< 9	1.66	0.0029	< 0.017	AA	0.0048
Total	< 67.0	< 77	< 127	9.74	0.0930	< 0.332	AA	0.0432
Average	< 4.8	< 5	< 9	0.70	0.0066	< 0.024	AA	0.0031
Maximum	< 7.1	6	< 9	1.66	0.0446	0.089	AA	0.0102
Minimum	1.8	< 5	< 9	0.30	0.0001	< 0.002	AA	0.0001

Transuranics	Am 241	Np 237	Pu 238	Pu 239+240
013120407	< 0.074	< 0.141	< 0.057	< 0.057

Plant Radiological Discharges to Surface Water
Calendar Year 2007 - 4th Quarter

United States Enrichment Corporation (USEC)
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

NOTES

Weekly concentrations and loadings with quarterly summaries are presented for Gross Alpha Activity, Gross Beta Activity, Technetium-99 (beta) Activity and Total Uranium Concentration. These figures are based on seven-day composite samples and measured flows at each outfall except at Outfall 005. Since Outfall 005 historically had no discharge, there is no composite sampler there and effluent data is based on grab samples and manual measurements taken when there is an actual discharge.

Starting in May, 2006, USEC began monitoring weekly radiological discharges at Outfalls 012 and 013 in accordance with the NRC License for the Lead Cascade of the American Centrifuge Plant. These two outfalls remain under the control of DOE and regulated under DOE's NPDES Permit. USEC is reporting the results of its weekly monitoring voluntarily. DOE is continuing its own monitoring and reporting in accordance with its Permit.

Quarterly concentrations are presented for Americium-241, Neptunium-237, Plutonium-238, Plutonium 239 and Plutonium 240 for the USEC Outfalls. (All of these are transuranics. Plutonium 239 and Plutonium 240 activities are reported as a combined activity because the analytical method used cannot distingush them.) These figures are based on quarterly grab samples.

Weekly concentrations that are below the Minimum Detectable Activity (MDA) or Laboratory Limit of Detection (LLD) are indicated by a "less than" (<) prefix ahead of the numerical MDA/LLD. MDA/LLDs vary somewhat from sample to sample depending on interferences present and other conditions.

Weekly loadings that correspond to less than MDA/LLD concentrations are calculated based on the MDA/LLD value and prefixed with a "<" except as follows: Technetium loadings at Outfalls 002, 004, 005, 009, 010, 011, 012 and 013 are presumed to be zero unless actually detected, based on the historical absence of technetium in these outfalls. These loadings are coded as "AA" unless actually detected.

Loadings are not calculated for transuranics because measurable transuranic concentrations are not normally present in any USEC-leased outfall.

AA indicates no detectable concentration.

AL indicates no flow during the sampling period.

Enclosure 5
GDP 08-0009

Ambient Gamma Levels for PORTS from the
Environmental TLD Monitoring Systems
and
Summary of Notice of Violations (NOVs), Permit
Exceedances, or Other Citations Issued to PORTS (NPDES)
CY2003 through CY2007

PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND NONCOMPLIANCES

CALENDAR YEAR 2003

Month	Limit Exceedance or Noncompliance
January	Copper concentration exceeded the daily limit of 98 mg/L at Outfall 003 (Actual discharge was 189 mg/L)
April	Water temperature exceeded the monthly average limit of 16.7°C at Outfall 903 (a downstream location in Little Beaver Creek). (Actual average temperature was 16.8°C.)
May	On May 6, the drain plug blew out of the west hot water tank in the X-705, releasing approximately 2000 gallons of potable water. A special chlorine sample was pulled at Outfall 001 on May 7 around 11:30am and the result was less than detectable.
	On May 7, the drain plug blew out of the east hot water tank in the X-705, releasing approximately 6000 gallons of potable water. A special chlorine sample was pulled at Outfall 001 on May 7 around 11:30am and the result was less than detectable.
July	On July 10, the United States Enrichment Corporation's X-621 coal pile runoff lagoon (NPDES outfall 602) overflowed due to an associated rainfall event. Rainfall data from the X-120 Met Tower recorded 1.74 inches of rain in a two hour period, which caused the overflow condition. The treatment process equipment was operating normally prior to, during, and after the rainfall event. A review of the operator's logbook of the X-621 treatment process showed twenty inches of free board the prior two days.
October	On October 24th a leak was discovered at the junction of a sanitary sewer line and a manhole vault between Nursing Home Road and U.S. Route 23 (NPDES outfall 003). The water from the leak (approximately 5 gpm) is combining with the effluent of X-230 J5 (NPDES outfall 010) and X-2230N (Bechtel Jacobs NPDES outfall 013) prior to reaching the Scioto River.
June	A Notice of Violation was issued June 2, 2003 for omitting a waste transporter ID number from the OI form of annual Hazardous Waste Report. A corrected form was submitted June 5, 2003, which abated the violation.

There were no exceedances of or other noncompliances with PORTS' NPDES permit conditions during the months of February, March, June, August, September, November and December. Exceedances of NPDES permit conditions and unpermitted discharges are reported as part of the routine Monthly Operating Report. There were no Notices of Violation or other non-NPDES environmental noncompliances except in June.

PORTSMOUTH GASEOUS DIFFUSION PLANT
AMBIENT GAMMA RADIATION LEVEL

QUARTERLY EXTERNAL GAMMA RADIATION LEVELS FOR 2003

TLD LOCATION	QUARTER				ANNUAL DOSE	
	FIRST	SECOND	THIRD	FOURTH	(µrem/hr)	(mrem/yr)
	(µrem/hr)					
Perimeter Road (excluding PP874)						
PP518	10.4	9.5	12.6	11.4	10.9	
PP862	13.2	11.2	16.4	16.5	14.3	
PP906	10.4	8.2	12.6	11.4	10.6	
PP933	15.9	13.3	20.8	15.3	16.1	
PP1406	11.0	8.6	15.4	11.4	11.4	
A35	12.1	10.3	11.5	13.4	11.9	
A40	9.9	7.3	12.1	9.4	9.5	
A36	12.1	9.5	15.9	11.4	12.0	
Mean	11.9	9.7	14.7	12.5	12.1	106
Std. Deviation	1.8	1.8	2.9	2.2		
PP874	75.7	75.2	79.5	75.5	76.3	0.33
Reservation Boundary						
A3	11.0	7.7	13.2	9.4	10.1	
A8	13.2	10.3	16.4	10.2	12.2	
A9	9.3	9.5	15.4	11.8	11.4	
A12	11.5	9.5	14.8	11.4	11.6	
A15	11.0	10.3	16.4	11.0	12.0	
A23	9.9	8.6	11.5	9.0	9.6	
A24	11.5	10.3	13.2	11.4	11.5	
A29	10.4	11.6	14.3	8.6	11.0	
Mean	11.0	9.7	14.4	10.4	11.2	98
Std. Deviation	1.1	1.1	1.6	1.1		
Offsite						
Piketon	11.0	9.0	13.7	10.6	10.9	96
Camp Creek	11.5	9.5	TLD Missing	9.4	10.0	88

Alphanumeric locations refer to Figures 5.1-14 and 5.1-15 of the Safety Analysis Report.

PP874 is located on Perimeter Road near the corner of a material storage yard within the DOE reservation with elevated gamma levels. The annual dose calculated for this location is an incremental dose based on historical public access to this area throughout the year. This was limited to drive through traffic and the most exposed member of the public was presumed to be a family member driving a plant worker to and from work. There has been no routine public access to this area since September 11, 2001.

PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES
CALENDAR YEAR 2004

Month	Limit Exceedance or Noncompliance
November	RCRA Notice of Violation received from OEPA/USEPA related to an unlabeled 5-gallon bucket of used oil improperly stored pending radiological characterization for disposal. The situation was corrected and no enforcement action was taken.

There were no exceedances or other noncompliances of PORTS' NPDES permit conditions during the year of 2004.

PORTSMOUTH GASEOUS DIFFUSION PLANT
AMBIENT GAMMA RADIATION LEVEL

QUARTERLY EXTERNAL GAMMA RADIATION LEVELS FOR 2004

TLD LOCATION	QUARTER FIRST (μrem/hr)	SECOND	THIRD	FOURTH	ANNUAL DOSE (μrem/hr)	ANNUAL DOSE (mrem/yr)
Perimeter Road (excluding PP874)						
PP518	13.1	11.8	12.2	13.0	12.5	
PP862	13.1	13.1	13.0	16.8	13.9	
PP906	10.2	8.6	8.2	14.6	10.2	
PP933	14.5	18.6	14.3	22.2	17.2	
PP1406	12.1	13.1	11.3	17.3	13.3	
A35	13.6	13.1	12.2	16.8	13.8	
A40	11.6	7.7	10.4	16.8	11.4	
A36	12.6	12.7	10.9	15.2	12.7	
Mean	12.6	12.3	11.6	16.6	13.1	115
Std. Deviation	1.2	3.1	1.7	2.5		
PP874	78.5	80.6	80.7	81.7	80.4	0.35
Reservation Boundary						
A3	12.1	12.2	11.3	17.9	13.2	
A8	13.6	14.5	11.3	21.6	15.0	
A9	12.1	13.1	12.6	17.3	13.7	
A12	11.1	10.9	9.1	16.2	11.6	
A15	11.1	10.9	12.6	17.3	12.8	
A23	12.1	11.8	11.3	14.1	12.2	
A24	TLD Missing	13.1	12.2	16.2	13.7	
A29	10.2	TLD Missing	TLD Missing	15.7	12.8	
Mean	11.8	12.4	11.5	17.0	13.0	114
Std. Deviation	1.0	1.2	1.1	2.1		
Offsite						
Piketon	12.1	10.4	10.9	15.7	12.1	106
Camp Creek	12.6	14.0	11.7	13.0	13.2	116

Alphanumeric locations refer to Figures 5.1-14 and 5.1-15 of the Safety Analysis Report.

PP874 is located on Perimeter Road near the corner of a material storage yard within the DOE reservation with elevated gamma levels. The annual dose calculated for this location is an incremental dose based on historical public access to this area throughout the year. This was limited to drive through traffic and the most exposed member of the public was presumed to be a family member driving a plant worker to and from work. There has been no routine public access to this area since September 11, 2001.

PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES

CALENDAR YEAR 2005

Month	Limit Exceedance or Noncompliance
April	The monthly average water temperature for Outfall 902 (Little Beaver Creek, downstream of Outfall 001) and Outfall 903 (Big Run Creek, downstream of Outfall 002) exceeded the monthly NPDES effluent limitation. The 902 average temperature was 17.6 °C and the 903 average temperature was 17.1 °C. The winter NPDES permit limit for both locations is 16.7 °C. The thermal load added by PORTS discharges was no greater than normal, but the creeks' ability to absorb the load without exceeding the winter temperature limit was reduced by the unusually mild April temperatures.
August	EPA issued a Notice of Violation citing two violations observed during an EPA/OEPA RCRA inspection in March. The first violation consisted of four polybottles of hazardous waste (less than ten gallons total) that were stored in a satellite accumulation area adjacent to a 90-day waste storage area instead of in the 90-day waste storage area. The second violation involved used fluorescent tubes that were being accumulated for disposal without adequate labeling in accordance to the Federal/State Universal Waste Rule(s). USEC implemented corrective actions which EPA accepted without any enforcement action.
September	On September 7th, a valving malfunction caused the X-640-2 firewater tank to overflow. Approximately 40,000 gallons of firewater overflowed from the tank onto the ground in a heavy vegetative area, which mitigated the impact. No detectable impact on the plant effluent or the environment was observed due to this overflow.
	On September 22nd foam was observed at the discharge of X-6619 Sewage Treatment Facility (Outfall 003) and at the discharge pipes at the Scioto River. An investigation revealed that the X-705 automated laundry dispenser, which dispenses defoaming agent into the laundry effluent drain, was not working properly. The offsite vendor was called to repair the defoaming dispensing system and the OEPA was notified in the routine monthly report.
November	On November 25th, a Power Operator discovered Polybutene Oil (high voltage insulating oil) overflowing from the X-530A tank overflow valve onto the ground. An estimated 90 gallons of oil spilled onto the ground. The National Response Center (NRC) and OEPA agencies were notified (Notification Number 780580) of the spill and cleanup measures were initiated, containing the oil to the X-530 switchyard and an adjacent ditch. No observable discharge of oil to the offsite environment occurred.
	The monthly average water temperature for Outfall 902 (Little Beaver Creek, downstream of Outfall 001) exceeded the monthly NPDES effluent limitation. The 902 average temperature was 17.6 °C. The applicable NPDES permit limit is 16.7 °C. The thermal load added to Little Beaver Creek by PORTS discharges was no greater than normal, but the creek's ability to absorb the load without exceeding the winter temperature limit was reduced by the unusually mild November temperatures.

PORTSMOUTH GASEOUS DIFFUSION PLANT
AMBIENT GAMMA RADIATION LEVEL

QUARTERLY EXTERNAL GAMMA RADIATION LEVELS FOR 2005

TLD LOCATION	QUARTER FIRST	SECOND	THIRD	FOURTH	ANNUAL DOSE (μrem/hr)	(mrem/yr)
	(μrem/hr)					
Perimeter Road (excluding PP874)						
PP518	11.6	15.9	11.2	11.6	12.5	
PP737	12.0	15.4	9.0	13.3	12.3	
PP862	16.0	19.3	13.9	15.9	16.2	
PP906	11.6	12.4	8.1	9.0	10.3	
PP933	17.6	20.8	14.8	18.0	17.7	
PP1404A	9.6	12.9	8.5	13.3	11.0	
A35	14.4	16.9	9.0	11.2	12.8	
A40	10.0	11.4	7.2	9.5	9.5	
A36	15.2	15.4	9.4	12.9	13.2	
Mean	13.1	15.6	10.1	12.7	12.8	113
Std. Deviation	2.8	3.1	2.6	2.9		
PP874*	87.7	93.3	81.1	80.3	85.4	0.37
Reservation Boundary						
A3	11.6	15.9	8.1	10.7	11.5	
A8	14.0	14.4	10.3	15.5	13.6	
A9	11.6	14.9	9.0	13.7	12.2	
A12	11.6	10.9	11.6	10.7	11.2	
A15	14.0	16.9	11.6	10.3	13.1	
A23	12.8	13.9	8.5	11.6	11.7	
A24	14.8	16.4	9.9	14.2	13.8	
A29	13.2	Missing	Missing	Missing	13.2	
Mean	13.0	14.7	9.9	12.4	12.5	109
Std. Deviation	1.3	2.0	1.4	2.0		
Offsite						
Piketon	13.6	12.4	7.6	12.9	11.7	103
Camp Creek	12.4	15.9	9.4	9.9	11.8	104

Alphanumeric locations refer to Figures 5.1-14 and 5.1-15 of the Safety Analysis Report.

PP874 is located on Perimeter Road near the corner of a material storage yard within the DOE reservation with elevated gamma levels. The annual dose calculated for this location is an incremental dose based on historical public access to this area throughout the year. This was limited to drive through traffic and the most exposed member of the public was presumed to be a family member driving a plant worker to and from work. There has been no routine public access to this area since September 11, 2001.

PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES
CALENDAR YEAR 2006

Month	Limit Exceedance or Noncompliance
January	On January 5th, the East Holding Pond (NPDES Outfall 001) effluent discharge had a Total Residual Chlorine detection of 0.11 mg/l. Upon investigating the cause for the presence of chlorine in the East Holding Pond, it was discovered that the X-330 Dry Air Plant (DAP) blowdown was not being dechlorinated with the correct amount of sodium sulfite. The Utility Water Engineer made the necessary adjustments to the dechlorination system that evening. Chlorine samples were collected again on January 9th and 10th; to confirm that proper dechlorination adjustments had been made. Both samples were reported as no detectable chlorine present in pond discharge.
	On January 19th, a water leak was discovered in a sanitary supply line that supplies the Ohio Valley Electrical Corporation with sanitary water. The sanitary water leak drained into the influent of the Northwest Holding Pond (Outfall 010), the leak was estimated at approximately 20 gallons per minute. The Northwest Holding Pond effluent was sampled for Total Residual Chlorine on January 19th and January 23rd; no chlorine was detected in either sample. Repair to the line break was completed on January 24th, 2006.
February	On February 14th, the X-633 RCW Blowdown (NPDES Outfall 004) was valved on to the Scioto River. The X-633 RCW Blowdown had been valved off for the past two weeks, and was valved on by the utilities operator due to the high water level in the X-633 RCW basin. Environmental Compliance was not notified of the X-633 Blowdown start up, and due to the NPDES Permit sampling frequency (7th thru the 14th), the weekly chlorine sample was missed for that week. This error was recognized the following morning. A chlorine sample was collected and no chlorine was detected in sample analyzed. Environmental and utilities are working together to ensure proper notification is made before facility startups.
February	On February 23rd, foam was reported at the X-6619 effluent discharge (NPDES Outfall 003). The discovery prompted a visual inspection of the final effluent discharge at the Scioto River, which also had foam present. Upon investigating the possible cause of foam presence, it was discovered that a plant wide cleanup operation had been on going for the past couple of days. It is believed that due to the numerous mopping events, and then discharging the cleaning solutions to the sanitary drains, that this caused the heavy foaming at X-6619 Sewage Treatment Facility. Janitorial supervision was notified to use the proper dilution amounts when preparing cleaning solutions. No foam was detected at the X-6619 effluent discharges the following day.

PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES

CALENDAR YEAR 2006

<table>
<tr><th>Month</th><th>Limit Exceedance or Noncompliance</th></tr>
<tr><td>April</td><td>On April 13th, a TSS exceedance (91.6 mg/L) was reported at NPDES outfall 011. The permitted TSS limit for outfall 011 is 45 mg/L. There have been no construction activities or ground disturbances upstream of outfall 011, nor have there been any reports (daily surveillance) of discolored (murky) water at this outfall. The cause of this exceedance was due to a relocation of the sample collection point. The sample (grab) point was moved on Feb 23 from the holding pond weir to an area downstream of the holding pond and the oil diversion pond (mixing zone). The sample point was moved in an effort to obtain a more representative sample of water being discharged from the two ponds. The TSS exceedance occurred because of low water flow in the stream, causing the environmental sampler to place the TSS collection container into the stream bottom to fill the two-liter sample container. The sediment from the stream bottom entered into the container causing an elevated TSS result. After this problem was identified, the TSS sample point was moved back to the holding pond weir on April 17. The oil and grease sample point is still located at the mixing zone. The elevated April 13th TSS value also caused a monthly TSS exceedance at outfall 011.

Outfall 011 Maximum Daily TSS 91.6 mg/L
Outfall 011 Monthly Average TSS 45.8 mg/L</td></tr>
<tr><td>April</td><td>The April monthly (average) water temperature for Outfall 902 (Little Beaver Creek, downstream of Outfall 001) and Outfall 903 (Big Run Creek, downstream of Outfall 002), exceeded the monthly NPDES limitation. Due to the unseasonable high ambient temperatures for the month of April, the water temperature in the creeks was elevated. The NPDES monthly average limit is 16.7 degrees Celsius. Outfall 902 monthly average was 1.3 degrees Celsius over the limit. Outfall 903 monthly average was 1.1 degrees Celsius over the limit.

Outfall 902 Monthly Average Temperature 18°C
Outfall 903 Monthly Average Temperature 17.9°C</td></tr>
</table>

PORTSMOUTH GASEOUS DIFFUSION PLANT
NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES
CALENDAR YEAR 2006

Month	Limit Exceedance or Noncompliance
September	On September 13th, 2006 the Ohio EPA conducted an inspection of the X-230J-6 Northeast Holding Pond (NPDES Outfall 011). This inspection coincided with a heavy rainfall, totaling 2.5 inches over the previous 36 hours. The Ohio EPA inspector observed a small oil sheen discharging over the weir onto 3M absorbent pads; the pads were placed at this location for preventative measures during the heavy rains. USEC personnel (sampler and engineer) had inspected and walked down the X-230J-6 effluent discharge earlier that morning and detected no oil sheen discharging from the pond at that time. NPDES oil & grease samples were also collected earlier in the morning and no oil and grease was detected in the samples. The Ohio EPA inspector notified USEC Environmental Compliance later in the afternoon of his observations. On September 14th 2006, the Ohio EPA inspector notified USEC by telephone requesting a PCB analysis of the oil contained behind the inlet boom at the Northeast Holding Pond and a PCB sample collected from the 3M oil absorbent cloth, located behind the inlet boom. The analysis of the oil contained at the inlet boom was 6.6 ppm PCB's (Aroclor 1260) and the analysis of the 3M cloth at the inlet boom was 1.3 ppb PCB's (Aroclor 1260). On September 20th, 2006 USEC was notified by the Ohio EPA that a Notice of Violation was being issued for the presence of a visible oil sheen discharging from the holding pond. This is a violation of USEC's NPDES Permit, Part III, Item 2, General Effluent Limitations. USEC is currently still in the process of collecting additional samples and taking proactive steps in stopping the oil run-off from the X-533 Switchyard.
October	On October 17th, Utilities reported the X-611 (Water Treatment Facility) make-up holding pond overflowing. An estimated thirty thousand gallons of make-up water overflowed from the X-611 holding pond into Little Beaver Creek. The make-up water is groundwater pumped from the X-608 well fields. The water in the holding pond is lime softened and has some flocculent polymer added. A chlorine and pH sample was collected from the holding pond overflow, no chlorine was detected and the pH was 7.02. This event occurred during a heavy precipitation event.

PORTSMOUTH GASEOUS DIFFUSION PLANT
AMBIENT GAMMA RADIATION LEVEL

QUARTERLY EXTERNAL GAMMA RADIATION LEVELS FOR 2006

TLD LOCATION	QUARTER FIRST (µrem/hr)	SECOND	THIRD	FOURTH	ANNUAL DOSE (µrem/hr)	ANNUAL DOSE (mrem/yr)
Perimeter Road (excluding PP874)						
PP518	12.2	9.1	13.4	13.7	12.1	
PP737	14.0	8.2	10.4	14.2	11.7	
PP862	13.6	12.6	15.4	13.7	13.8	
PP906	8.6	8.2	11.4	10.2	9.6	
PP933	18.1	12.2	19.3	24.8	18.6	
PP1404A	9.5	10.0	10.9	12.4	10.7	
A35	14.5	8.2	10.4	14.2	11.8	
A40	8.6	8.2	10.4	10.2	9.3	
A36	10.9	10.4	12.9	12.9	11.7	
Mean	12.2	9.7	12.7	14.0	12.1	107
Std. Deviation	3.2	1.7	3.0	4.3		
PP874*	92.8	89.8	86.8	84.2	88.5	0.38
Reservation Boundary						
A3	10.0	8.2	10.4	11.1	9.9	
A8	12.2	9.5	11.4	15.1	12.1	
A9	9.5	8.7	11.9	11.5	10.4	
A12	10.0	9.1	13.9	10.6	10.8	
A15	12.2	11.3	11.4	14.2	12.3	
A23	11.3	10.0	13.4	14.2	12.2	
A24	11.8	9.5	14.9	12.4	12.1	
A29	Missing	Missing	9.9	Missing	9.9	
Mean	11.0	9.5	12.2	12.7	11.3	99
Std. Deviation	1.2	1.0	1.7	1.7		
Offsite						
Piketon	10.9	10.4	12.4	10.2	10.9	96
Camp Creek	14.0	9.5	12.4	13.7	12.4	109

Alphanumeric locations refer to Figures 5.1-14 and 5.1-15 of the Safety Analysis Report.

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PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES
CALENDAR YEAR 2007

Month	Limit Exceedance or Noncompliance
February	On February 20th, 2007 at 0945 a utility operator discovered water leaking out of the ground near the east side of the X-720 Building. Analysis confirmed the leak source to be sanitary water. The leak was estimated at approximately 50 gallons per minute. This X-720 Building drainage sector drains to the East Holding Pond, NPDES Outfall 0IS00023001. Water samples at the outfall detected no chlorine in the effluent.
April	On April 4, 2007 at approximately 0400 hours, the feed pump which supplies the GE Betz Cortrol OS5700 (oxygen scavenger) to the X-600 (Steam Plant) boiler water, overfed the Cortrol OS5700 chemical into the boiler feed water. The hazardous ingredient contained in the GE Betz Cortrol OS5700 is Diethylhydroxylamine (DHEA). Based on the amount of DHEA "over feed" it was calculated that an exceedance of the Director's Final Findings and Order (DFO) most likely occurred at the South Holding Pond effluent (NPDES Outfall OIS00023002). Due to test interference in the South Holding Pond effluent (reactive iron), the exceedance was based on the DHEA boiler feed concentration compared to the South Holding Pond water volume and flow.
June	USEC received a NOV from the USEPA based on an on-site inspection from June 19-22, 2006. The NOV stated the RCRA Contingency Plan did not include a 15-day notification requirement. No civil penalty was assessed. The RCRA Contingency Plan has since been revised to include the cited requirement.
September	On September 10, 2007 at 0900 hours, the utilities supervisor reported that the automatic cooling water solenoid on the X-611C east sanitary diesel generator, had failed in the open position, thus causing sanitary water to drain into the X-611 west ditch which discharges to Little Beaver Creek. The sanitary water discharging from X-611 to the ditch was approximately 8,640 gallons per day. The solenoid valve was repaired on September 13, 2007. A chlorine sample was collected daily from the water draining into Little Beaver Creek. No chlorine was detected. On September 25, 2007 at 1130 hours an elevated chlorine analysis (0.11mg/l) was detected in the NPDES Outfall 003 effluent sample. Upon notification of the elevated chlorine, USEC made adjustments to decrease the chlorine feed. A second water sample was collected at 1500 hours and no chlorine was detected in the effluent discharge. This exceedance can be attributed to the temporary suspension of the dechlorination treatment process at the X-6619 Sewage Treatment Facility, where a facility upgrade project is presently ongoing. USEC notified (POEF-360-07-090) the OEPA on August 24, 2007 of the upgrade project. USEC was granted bypass approval from the State.

PORTSMOUTH GASEOUS DIFFUSION PLANT

NPDES PERMIT EXCEEDANCES AND OTHER NONCOMPLIANCES

CALENDAR YEAR 2007

Month	Limit Exceedance or Noncompliance
December	USEC received a NOV from the USEPA based on an on-site RCRA inspection from August 7-9, 2007. The NOV stated USEC was in noncompliance with three requirements of RCRA: 1) Flakes of filter cake from a hazardous wastewater treatment unit had fallen to the floor and not been cleaned up promptly; 2) Several containers of waste were not properly characterized as hazardous or non-hazardous; and 3) An old plant truck was observed leaking motor oil onto a concrete pad without being cleaned up. USEC has corrected all three conditions and no civil penalty was assessed.

PORTSMOUTH GASEOUS DIFFUSION PLANT
AMBIENT GAMMA RADIATION LEVEL

QUARTERLY EXTERNAL GAMMA RADIATION LEVELS FOR 2007

TLD LOCATION	QUARTER FIRST (µrem/hr)	SECOND	THIRD	FOURTH	ANNUAL DOSE (µrem/hr)	ANNUAL DOSE (mrem/yr)
Perimeter Road (excluding PP874)						
PP518	13.3	10.6	12.9	13.0	12.4	
PP737	12.3	10.6	15.4	12.1	12.5	
PP862	14.7	13.2	16.4	13.9	14.5	
PP906	9.0	11.5	9.9	9.0	9.9	
PP933	24.1	19.1	19.3	20.6	20.8	
PP1404A	12.3	13.6	11.4	11.2	12.2	
A35	14.2	14.9	14.4	10.8	13.5	
A40	11.8	11.9	10.9	9.9	11.1	
A36	12.8	11.1	11.9	10.3	11.5	
Mean	13.8	12.9	13.6	12.3	13.1	116
Std. Deviation	4.2	2.7	3.0	3.5		
PP874*	89.5	87.6	91.8	69.0	84.3	0.37
A3	14.2	11.9	9.9	9.9	11.5	
A8	13.7	14.5	12.4	10.3	12.7	
A9	13.3	12.3	10.9	11.6	12.1	
A12	13.3	14.0	14.9	Data Error	14.0	
A15	12.3	10.6	11.9	12.5	11.8	
A23	14.2	9.4	9.9	12.5	11.5	
A24	13.7	14.0	11.4	9.9	12.3	
A29	12.8	Missing	Missing	Missing	12.8	
Mean	13.4	12.4	11.6	11.1	12.1	107
Std. Deviation	0.7	1.9	1.7	1.3		
Piketon	13.3	12.8	13.9	9.4	12.3	108
Camp Creek	12.3	9.8	14.9	12.5	12.3	108

Alphanumeric locations refer to Figures 5.1-14 and 5.1-15 of the Safety Analysis Report.

PP874 is located on Perimeter Road near the corner of a material storage yard within the DOE reservation with elevated gamma levels. The annual dose calculated for this location is an incremental dose based on historical public access to this area throughout the year. This was limited to drive through traffic and the most exposed member of the public was presumed to be a family member driving a plant worker to and from work. There has been no routine public access to this area since September 11, 2001.

Background has not been subtracted from the TLD data.