

**Uranium Enrichment Toxic Substances Control Act
Quarterly Compliance Agreement
Report for the
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky,
July 1 through September 30, 2017**



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Report for the
Paducah Gaseous Diffusion Plant,
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July 1 through September 30, 2017**

Date Issued—November 2017

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
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managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

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ACRONYMS

CA	Compliance Agreement
<i>CFR</i>	<i>Code of Federal Regulations</i>
CY	calendar year
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
LLW	low-level waste
NESHAP	National Emissions Standards for Hazardous Air Pollutants
PGDP	Paducah Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act
TSCA	Toxic Substances Control Act
UE	uranium enrichment
UHWM	Uniform Hazardous Waste Manifest

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1. INTRODUCTION

The Uranium Enrichment (UE) Toxic Substances Control Act (TSCA) Compliance Agreement (CA) was signed by the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) on February 20, 1992, modified in 1997, and modified again on May 30, 2017. The original UE TSCA CA required quarterly reports summarizing progress toward completing polychlorinated biphenyl (PCB)-related compliance measures. These measures include troughing, air sampling, process lubrication oil removal, spill cleanup, and disposal. As of March 30, 1994, the troughing interim measure was completed. Ongoing inspections of ventilation duct and troughing systems are performed to identify leaks or spills requiring additional troughing or trough maintenance. Subsequent to the May 30, 2017, modification, only PCB Spill Cleanup progress is required to be reported on a quarterly basis. The quarterly reports will be maintained at the DOE Site Office and available to EPA, upon request, 45 days following the end of the quarter. The quarterly reports are required to be included in DOE's Annual Compliance Agreement Report. The following summary satisfies the modified UE TSCA CA quarterly reporting requirements for July 1 through September 30, 2017.

2. COMPLIANCE MEASURES

2.1 SPILL CLEANUP

2.1.1 Requirements

Attachment I, Section 2 (C), of the UE TSCA CA states the following:

Spill Cleanup – PCBs and PCB-contaminated oil that may leak onto building floors shall be cleaned up in accordance with the EPA Spill Cleanup Policy. For spills > 500 (ppm) PCBs, this shall consist of cleanup to 10 µg PCB/100 cm² with 95% confidence, based on the statistical sampling approach set forth in Attachment III, which shall be used within the spill area to verify cleanup to appropriate levels or, alternatively, to 100 µg PCB/100 cm² with 95% confidence, based on the statistical sampling approach set forth in Attachment III, which shall be used within the spill area to verify cleanup to appropriate levels followed by application of an appropriate sealant, such as a 2-layered epoxy-type paint. All spill cleanups will be initiated within 24 hours of discovery, excluding historic spills which are defined as PCB stains resulting from spills which have occurred prior to the effective date of the February 20, 1992 Compliance Agreement. Historical spills may be left in place until demolition of the facility, provided public access to the facility is restricted to prevent unauthorized entry. In the event that a new spill should occur on a historical spill site, and the appropriate standard specified above cannot be met after best efforts to meet the standard are made, DOE may request that EPA consider the efforts DOE has made and classify the spill area as a historical spill for purposes of the cleanup under this Agreement.

2.1.2 Work Completion Date

None listed.

2.1.3 Activity for this Quarter

Gasket spill sites 1941, 1952, 1953, 1974, 1989, 1992, 2001, 2003, 2006, 2008, and 2009 were pending post-cleanup verification at the beginning of this reporting period. One new gasket spill, 2010, was identified on the building floor during the reporting period. Gasket spill sites 2001 and 2008 were closed during the reporting period by verifying sampling data. Ten gasket spill sites—1941, 1952, 1953, 1974, 1989, 1992, 2003, 2006, 2009, and 2010—were pending post-cleanup verification at the end of this reporting period. PCB spill cleanup progress for calendar year (CY) 2017 is illustrated in Figure 1. A detailed description of all open gasket spills is provided in Table 1.

All PCB gasket spills identified were high concentration PCB spills (i.e., from a source of 500 ppm or greater in PCB concentration). Cleanup of each identified spill site was initiated within 24 hours, in accordance with the original UE TSCA CA. Clearly visible signs have been posted at each spill site advising personnel to avoid the area in order to minimize the spread of contamination and the potential for human exposure. The cleanup documentation and the records are available for inspection.

2.2 STORAGE

2.2.1 Requirements

Attachment I, Section 2 (D), of the UE TSCA CA states the following:

Storage – Except as specifically set forth herein, all PCB waste storage areas shall meet storage area requirements in accordance with 40 *CFR* § 761.65 and shall not contain nonradioactive PCBs and PCB Items stored for more than one year. Radioactive PCBs and PCB Items must be stored for disposal in accordance with 40 *CFR* § 761.65. Radioactive PCBs and PCB Items stored in TSCA-compliant storage areas may be stored for more than one year prior to disposal pursuant to 40 *CFR* § 761.65(a)(1). Non-radioactive PCBs and PCB Items must be stored for disposal in accordance with 40 *CFR* § 761.65, including the one-year limitation on storage for disposal in 40 *CFR* § 761.65(a)(1). PCB and PCB Items must be stored for disposal in accordance with 40 *CFR* § 761.65, including applicable storage limitations for radioactive and non-radioactive PCBs and PCB Items.

2.2.2 Work Completion Date

Completed; storage for disposal is ongoing.

2.2.3 Activity for this Quarter

All waste stored during the third quarter of 2017 met the requirements of the TSCA CA. The following waste items remain in storage past one year; however, all are exempt from a one-year disposal requirement because each waste item contains radioactive PCB material: 106744-01, 107839-01, 119845-59, 119863-01, 119874-05, 119874-06, 119874-07, 119874-08, 119874-09, 119874-10, 119874-11, 119881-01, and 121161-01. Items 106744-01 and 107839-01 are disconnected, de-energized transformers. The remaining 11 waste items are drums of miscellaneous waste.

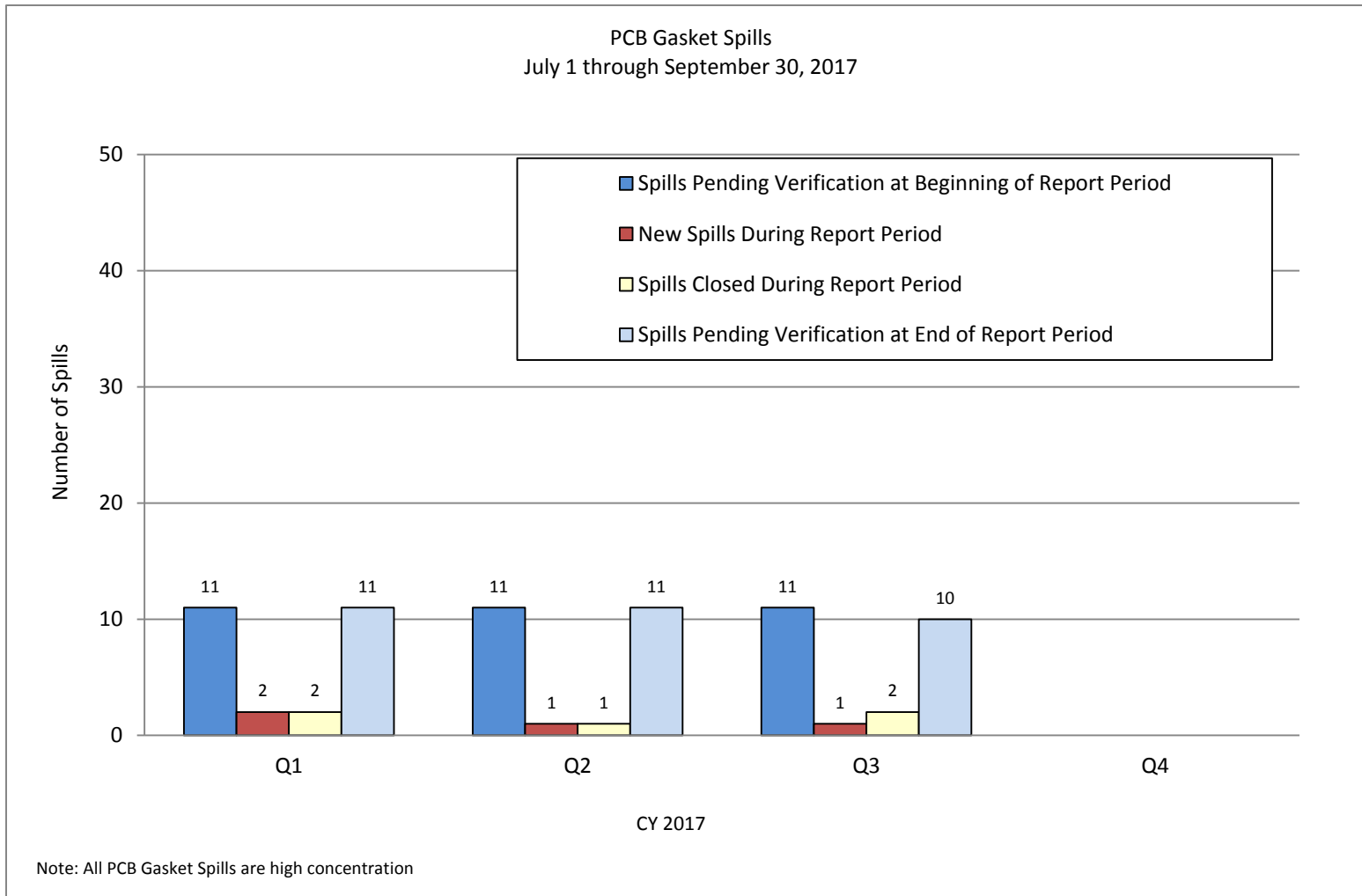


Figure 1. Quarterly Summary of PCB Gasket Spills

Table 1. Open Gasket Spill Report

OPEN GASKET SPILL REPORT

<i>REPORT</i>	<i>DATE</i>	<i>TIME</i>	<i>BUILDING</i>	<i>COLUMN</i>	<i>DAYS OPEN</i>	<i>COMMENTS</i>	<i>STATUS</i>
1941	5/10/2011	1230	C-337	U1 C5	2380	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 11/21/2014 management of open PCB spills transferred to DOE upon de-lease of operations at PGDP. DOE is responsible for the cleanup of all open PCB spills generated under the USEC lease period which ended in 2014. 5/16/11 Column Gb-6. Per phone conversation with Mike Golightly, USEC initiated cleanup within 24 hours; further sampling is needed and cleanup will continue. Issued as 1939, Mike Golightly to get PSS to correct to 1941. Spill is caused by a hydraulic leak into the instrument duct; instrumentation within the U1C5 heated cubicle is coated, there is no pool [of oil]. Spill site has been flagged and posted. The door and access panel is ready for cleanup per Mike Golightly.	Incomplete
1952	1/13/2012	0900	C-337	Gb29	2132	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 11/21/2014 management of open PCB spills transferred to DOE upon de-lease of operations at PGDP. DOE is responsible for the cleanup of all open PCB spills generated under the USEC lease period which ended in 2014. 1/13/12 Oil dripping from open ductwork onto energized transformer 7-2-6-A. Initial cleanup completed by USEC on 1/13/12 at 1300.	Incomplete
1953	1/13/2012	0900	C-337	La-22	2132	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 11/21/2014 management of open PCB spills transferred to DOE upon de-lease of operations at PGDP. DOE is responsible for the cleanup of all open PCB spills generated under the USEC lease period which ended in 2014. 1/13/12 Oil dripping from open ductwork onto energized transformer U2-1-A. Initial cleanup completed by USEC on 1/13/12 at 1400.	Incomplete

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Table 1. Open Gasket Spill Report (Continued)

<i>REPORT</i>	<i>DATE</i>	<i>TIME</i>	<i>BUILDING</i>	<i>COLUMN</i>	<i>DAYS OPEN</i>	<i>COMMENTS</i>	<i>STATUS</i>
1974	8/21/2013	1300	C-337	W-43	1546	10/26/17 update: A recent smaller spill area, within the existing, open 1974 spill area, cleaned and plastic put down. Recent smaller spill area given designation of #1974A to denote being an additional spill but still part of the original 1974 spill area. 10/25/17 update: Smaller spill occurred within boundary 1974 existing, open spill site. 10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 6/14/17 update: 4S analytical data received - Above regulatory limits. 4/19/17 update: Area recleaned and 4S sampled. 3/27/17 update: requested 4S sampling. 1/13/16 update: 3S analytical data received - Above regulatory limits. Reclean/resample required. 12/10/15 update: Spill site recleaned and 3S sample collected. 8/18/15 update: 2S analytical data received - Above regulatory limits. Reclean/resample required. 6/24/15 update: spill site recleaned and 2S sample collected. 5/7/15 update: analytical data - Above regulatory limits. Reclean/resample required. 4/1/15 update: 1S sample collected. 2/12/15 update: requested 1 S sampling. 11/21/2014 management of open PCB spills transferred to DOE upon de-lease of operations at PGDP. DOE is responsible for the cleanup of all open PCB spills generated under the USEC lease period which ended in 2014. 8/21/13: An area ~40 feet by 50 feet containing potentially PCB contaminated water. Estimated volume is 5 gallons of low concentration PCB water (No oil sheen). Quantity is less than RQ. The water is being sampled for PCB concentration.	Incomplete
1989	2/21/2015	0330	C-337	B-36	997	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 6/14/17 update: 7S Above regulatory limits. 4/19/17: area recleaned and resampled. 3/27/17 update: requested 7S sampling event. 11/29/16 update: 6S sample has 3 locations above regulatory limits. 9/1/16 update: 6S sample collected. 12/22/15 update: 5S sample above regulatory limit. Additional sampling required. 11/18/15 update: spill site cleaned and 5S sample collected. 11/5/15 update: 5S sample requested. 10/29/15 update: 4S Above regulatory limit. Additional sampling required. 09/24/14 update: spill site cleaned and 4S sample collected. 07/08/15 update: requested 4S sample. 07/07/15 update 1S, 2S, 3S All above regulatory limits. Required additional sampling. 05/07/15 update: 1S, 2S, 3S sample collected with cleaning between each sampling event. 04/16/15 update: requested 1S, 2S, 3S sampling. Water leaking from broken PCB trough. ~ 3 foot wet spot on floor. Drum placed under leak. Absorbent pads used to collect water. Initial cleaning completed. Area posted and flagged off.	Incomplete

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Table 1. Open Gasket Spill Report (Continued)

<i>REPORT</i>	<i>DATE</i>	<i>TIME</i>	<i>BUILDING</i>	<i>COLUMN</i>	<i>DAYS OPEN</i>	<i>COMMENTS</i>	<i>STATUS</i>
1992	11/17/2015	1259	C-337	Y-27	728	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 6/14/17 update: 4S Above regulatory limits. 4/19/17 4S area clean and sample collected. 3/8/17 update: 3S sample above regulatory limits. 2/7/17 update area cleaned and 3S sample collected. 11/29/16 update: Received 2S spill data. One area above regulatory limits. 9/1/16 update: resampled spill area. 5/26/16 update: 1S sample Above regulatory limits. 1/12/16 update: Maintenance complete. Replaced strap that was causing pan to tip to one side. Repositioned straps to inside pan. Water in area 4'3" by 4'9". Water from PCB trough. Area roped and posted. Initial cleanup completed.	Incomplete
2003	3/28/2016	1230	C-333	P-12	596	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 10/18/17 update: 5S sample Above regulatory limits. 7/19/17 update: 4S sample Above regulatory limits. 5/11/17 update: 4S Sampling completed. 10/17/16 update: all sample points were above regulatory limits. 8/25/16 update: sampled 1S, 2S, and 3S, 1 sample point. 3/30/16 update: maintenance complete, installed new 90 degree elbow and coupling. 3/28/16 update: 1S, 2S, 3S sampling requested. 3 drops on floor in 100 cm2 area. Roped off, posted, initial clean up complete.	Incomplete
2006	8/24/2016	0835	C-337	X-23	447	11/6/17 update: 3S sample request submitted. 10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 10/18/17 update: 2S sample Above regulatory limits. 7/19/17 update: 1S sample Above regulatory limits. 5/11/17 update: Sampling completed. Column X-23, Water 20" by 20" area of PCB contaminated water. Initial cleanup completed, posted, and flagging in progress.	Incomplete
2009	4/30/2017	2102	C-335	DD-25	172	10/18/17 update: sample 1S Below regulatory limits. 9/19/17 update: 1S sampling completed. 5/3/17 update: maintenance completed. 5/1/17 update: initial cleanup completed at 1030. C-335 columns DD-25, Ee-25, Dd-26, EE-26. Rain water is leaking in from outside and through troughs. The liquid appears to be almost entirely water. There is not an easily identifiable oil sheen on the water. The spill is being reported as a PCB spill as the water is leaking from the PCB trough system. The area has been isolated with caution tape and PCB warning signs. Absorbent rolls have been placed around the water in an attempt to isolate the spill area.	Incomplete

Table 1. Open Gasket Spill Report (Continued)

<i>REPORT</i>	<i>DATE</i>	<i>TIME</i>	<i>BUILDING</i>	<i>COLUMN</i>	<i>DAYS OPEN</i>	<i>COMMENTS</i>	<i>STATUS</i>
2010	8/7/2017	1000	C-337	Cb-26	99	10/20/2017 FRNP becomes managing contractor for the Deactivation and Remediation Project at PGDP. 9/18/17 update: 1S, 2S, 3S sampled. 8/7/17 update: submitted sample request 1S, 2S, 3S. 100 square centimeters area. 1 drop of oil from untroughed gasket. Initial cleanup double wash double rinse. Flagged and posted area. Installed trough under leaking gasket. Maintenance completed.	Incomplete

Open Spills: 10

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2.3 DISPOSAL

2.3.1 Requirements

Attachment I, Section 2 (F) of this modified UE TSCA CA states the following:

Disposal – All waste PCBs, PCB Items and ventilation ducts (and associated flanges), electrical cables and associated equipment contaminated with PCBs which were not decontaminated pursuant to Sections 2(C), 2(E), and 2(F) of this Attachment, shall be disposed of in accordance with 40 *CFR* § 761.50. All waste PCBs and PCB Items contaminated with hazardous waste and/or asbestos shall be disposed of in accordance with TSCA, NESHAP [National Emission Standard for Hazardous Air Pollutants] and RCRA [Resource Conservation and Recovery Act] requirements, and/or alternate disposal methods approved by EPA.

2.3.2 Work Completion Date

- Nonradioactive PCBs and PCB Items—Within one year after the date the materials were placed into storage for disposal in accordance with Section 2(D) of the attachment of this UE TSCA CA.
- Co-contaminated, radioactive PCBs, and PCB items stored for disposal—Radioactive PCBs and PCB Items will be stored for disposal in accordance with Section 2(D) of this Attachment and 40 *CFR* § 761.65.
- Ventilation gaskets, ductwork and flanges, electrical cable, associated equipment, and historic spill material—Work will be completed within 10 years of work initiation date for each building.

2.3.3 Activity for this Quarter

During the third quarter 2017, 10.05 kg of PCB waste was shipped for disposal. Two Certificates of Disposal were received during the reporting period. Waste shipped for disposal during this reporting period is summarized in Table 2. The Certificates of Disposal received during this reporting period are included in Table 3. The PCB waste included in Tables 2 and 3 was generated as a result of site cleanup and operations, including Comprehensive Environmental Response, Compensation, and Liability Act waste. These are provided for information only and are intended to show progress toward removal of PCBs at Paducah.

Table 2. PCB Waste Shipped Off-Site Disposal Activities: Waste Shipped Off-Site July 1 through September 30, 2017

PCB Item Count	Description	Weight (kg)	Earliest Date Removed from Service	Date Shipped	Manifest	Shipment No.	Disposal Location	Disposal Method	Disposal Date	CD Rec'd No. of Items Disposed of
1	Drum PCB Remediation Waste	10	12/7/2016	7/11/2017	006841890JJK	DSSI-17-082	DSSI-Perma-Fix, Kingston, TN			
1	Drum-LLW/RCRA/PCB Remediation Waste	0.05 ¹	5/8/2017	7/11/2017	006841893JJK	ETTP-17-103	M&EC, Oak Ridge, TN			
2	Total Shipped	10.05								

CD = Certificate of Disposal
 PCB = polychlorinated biphenyl

All PCB waste listed is PCB/radioactive waste.
 Weights and volumes are taken from the Uniform Hazardous Waste Manifests (UHWMs).

¹ This weight varies from the UHWM due to UHWM being rounded to the nearest whole number.

Table 3. PCB Waste Shipped Off-Site Disposal Activities: Certificates of Disposal Received July 1 through September 30, 2017

PCB Item Count	Description	Weight (kg)	Earliest Date Removed from Service	Date Shipped	Manifest	Shipment No.	Disposal Location	Disposal Method	Disposal Date	CD Rec'd
										PCB Item Count
64	Drums of Vent Duct Oil/Water-PCB	12,226	7/07/2015	1/25/2017	006841845JJK	DSSI-17-008	DSSI-Perma-Fix, Kingston, TN	Alternate Thermal Treatment	5/8/2017	7/19/2017 64
3	ST-90s of Scrap Metal F-Listed and PCB	2,642 ¹	12/02/2016	6/1/2017	006841869JJK	9701-02-0017	EnergySolutions, Clive, UT	Landfill	7/24/2017	8/25/2017 3
67	Total Disposed	14,868								Total CDs Received 2

CD = Certificate of Disposal

PCB = polychlorinated biphenyl

All PCB waste listed is PCB/radioactive waste.
Weights and volumes are taken from the UHWMs.

¹ This weight varies from weight reported in the second quarter report. Second quarter report data currently is being reassessed.