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CP2-ES-0102/R2

Site Sustainability Plan for the Fluor Federal Services, Inc., Paducah Deactivation Project, Paducah, Kentucky

Site Sustainability Plan for the Fluor Federal Services, Inc., Paducah Deactivation Project, Paducah, Kentucky

Date Issued—March 2017

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FLUOR FEDERAL SERVICES, INC.,
Paducah Deactivation Project
managing the
Deactivation Project at the
Paducah Gaseous Diffusion Plant
under Task Order DE-DT0007774

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APPROVALS

Site Sustainability Plan for the
Fluor Federal Services, Inc.,
Paducah Deactivation Project
CP2-ES-0102/R2

This Site Sustainability Plan implements the requirements of U.S. Department of Energy (DOE) Order 436.1, *Departmental Sustainability,* for Fluor Federal Services, Inc., Paducah Deactivation Project for the Paducah Gaseous Diffusion Plant. This plan is to develop or support development of commitments that identify Deactivation Project contributions toward meeting DOE sustainability goals.

Paducah Site management is committed fully to the proper implementation of this SSP.

Myrna Redfield
Environmental Management Director

3/28/17
Date Signed

Bobby D. Smith
Program Manager

3/28/17
Date Signed

Exemption #28
per L.C. Valentine
02/20/2017

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REVISION LOG

REVISION NUMBER	DATE	DESCRIPTION OF CHANGES	PAGES AFFECTED
0	10/20/2014	Initial Issue	All
1	06/23/2015	Revision to incorporate DOE comments.	All
2	03/28/2017	Update based on Guidance for FY 2017 DOE Site Sustainability Plans, dated 08/29/2016. Includes updated FY 2015 and FY 2016 FPDP metrics and activities.	All

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ACRONYMS

AFV	alternative fuel vehicle
BTU	British thermal unit
DOE	U.S. Department of Energy
E85	85% denatured ethanol fuel
EAP	emergency action plan
EISA	Energy Independence and Security Act
EPEAT	Electronic Product Environmental Assessment Tool
ESPC	energy savings performance contract
EUI	energy use intensity
FPDP	Fluor Federal Services, Inc., Paducah Deactivation Project
FY	fiscal year
GHG	greenhouse gas
GP	guiding principles
GSA	General Services Administration
GSF	gross square feet
HPSB	high performance and sustainable buildings
ILA	industrial, landscaping, and agricultural
LED	light-emitting diode
MWh	megawatt hour
NRC	U.S. Nuclear Regulatory Commission
PGDP	Paducah Gaseous Diffusion Plant
PPPO	Portsmouth/Paducah Project Office
S&M	surveillance and maintenance
SSP	Site Sustainability Plan
SSPP	Strategic Sustainability Performance Plan
USEC	United States Enrichment Corporation

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EXECUTIVE SUMMARY

This Fluor Federal Services, Inc., Paducah Deactivation Project (FPDP) Site Sustainability Plan (SSP) implements the requirements of U.S. Department of Energy (DOE) Order 436.1, *Departmental Sustainability,* at the Paducah Gaseous Diffusion Plant (PGDP). The Infrastructure Contractor, Swift and Staley Inc. (SST), is the energy steward for the site and is responsible for managing the site's Sustainability Program and for compiling and reporting data into the DOE Sustainability Dashboard, with assistance from FPDP and the Depleted Uranium Hexafluoride Conversion Facility Contractor (as of February 1, 2017, Mid-America Conversion Services). The purpose of the FPDP SSP is to develop or support development of commitments that identify FPDP contributions toward meeting DOE sustainability goals for the site. FPDP's operational plans will be integrated with this SSP; FPDP will use the Environmental Management System as a platform for SSP implementation.

The FPDP task order contract with DOE requires development and implementation of an SSP in accordance with DOE O 436.1. This revision serves as an update to the FPDP SSP and contains fiscal year (FY) 2016 sustainability performance data reporting including FY 2017 plans, as required by *Guidance for FY 2017 DOE Site Sustainability Plans*, dated August 29, 2016.

PGDP is located on a federal site in western Kentucky, approximately 10 miles west of Paducah, Kentucky, and 3.5 miles south of the Ohio River. The plant is on a 3,556-acre DOE site, approximately 837 acres of which are within a fenced security area, 600 acres are located outside the security fence, 133 acres are in acquired easements, and the remaining 1,986 acres are licensed to the Commonwealth of Kentucky as part of the West Kentucky Wildlife Management Area. The PGDP is a government-owned plant that was constructed in the early 1950s and was operated by DOE and its predecessor agencies for manufacturing enriched uranium for the fabrication of fuel assemblies to support commercial and military nuclear reactors and to support weapons development activities. The 1992 Energy Policy Act initiated a process to privatize the DOE uranium enrichment enterprises; the United States Enrichment Corporation (USEC) was established for this purpose. The Paducah and Portsmouth gaseous diffusion plants were leased to USEC and were required to be operated under regulations of the U.S. Nuclear Regulatory Commission (NRC), which issued certificates of compliance for the facilities in November 1996. PGDP enriched uranium from the early 1950s until 2013, when uranium enrichment operations ceased. On October 21, 2014, the lease between USEC and DOE ended, and the PGDP leased facilities were transferred back to DOE. With the return of USEC facilities, previously leased areas now are included as part of the PGDP site sustainability footprint. When the leased gross square footage (GSF) was transferred to DOE, the Environmental Management footprint went from 722,390 GSF to 8,174,722 GSF. The facilities and their respective utilities previously were not tracked and reported as part of the Site Sustainability Program because they were regulated by the NRC. Because FPDP inherited the majority of the previously leased facilities, FY 2015 metrics provide the most valid comparison data in meeting site sustainability goals and targets.

FPDP is responsible for planning, managing, integrating, optimizing, and executing facility and infrastructure stabilization and deactivation. Responsibilities also include surveillance and maintenance (S&M) of the shutdown production and associated support facilities as well as remediation and waste management activities at the PGDP site. Deactivation and optimization activities started upon return of the leased facilities to DOE. FPDP currently manages 146 buildings, 109 trailers, and 589 other structured facilities, which include areas such as pads, yards, tanks, and monitoring wells. FPDP buildings and trailers cover approximately 8 million ft^2. The majority of the GSF is attributable to the process buildings. During FY 2016, 18 FPDP facilities were demolished and 1 trailer administratively archived as it falls under personal property; these actions resulted in an FPDP footprint reduction of 270,870 GSF.

FPDP is using a multifaceted approach to achieve site sustainability goals by making physical changes to increase sustainability and by introducing an increased awareness of sustainability opportunities in the workplace. FPDP completed optimization studies and improvement projects during FY 2015 and FY 2016, which include the recent consolidation of the site's four outdated and oversized electrical switchyards into a single switchyard providing a more efficient and sustainable supply of power; replacement of existing coal-fired boilers with more efficient natural gas-fired package boilers; and resurfacing the roofs on the site's 5 process buildings that have a footprint of approximately 74 acres. The roof resurfacing consisted of a Sarnafil polyvinyl chloride membrane material, which is recyclable at the end of its useful life, is Energy Smart by reducing energy costs, and has a 30-year warranty.

Currently, most FPDP facilities at the Paducah Site do not have individually installed water, electrical, or gas meters. Meters are available for groups of facilities based upon service connections, transformers, etc. As facilities are isolated from utility services, FPDP and the site will see reductions for each of the DOE goals. When metered data is not available (or adequate) to measure and verify performance of a particular facility improvement, the appropriate Federal Energy Management Program protocol for measurement and verification of the improvement is implemented. Table ES.1 is a summary of FPDP planned actions to attain DOE's sustainability goals (i.e., greenhouse gas reduction, fleet management, water use efficiency, etc.). The Annual Excluded Building Self-Certification is addressed by the Infrastructure Contractor as part of the FY 2017 SSP.

FPDP will continue to work together with the Infrastructure Contractor to communicate and share SSP information, metrics, contractor experiences, and future successes to build upon and progress toward PGDP Sitewide Sustainability Goals.

Table ES.1. Summary Table of Goals and Targets

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
Goal 1: Greenhouse Gas Reduction				
1.1	50% Scope 1 and 2 greenhouse gas (GHG) reduction by FY 2025 from a FY 2008 baseline FY 2016 target: 22%	Scope 1 and 2 GHG emissions for the site have increased dramatically with the return of USEC-leased facilities to DOE. FPDP continues to right-size utilities and reduce electric usage. Completed projects such as switchyard consolidation, replacement of coal-fired boilers with efficient package boilers, and installation of cool roofing have contributed to reductions in Scope 1 and 2 GHG.	As FPDP continues optimizing facility systems and structures to minimize short-term and long-term S&M costs, energy consumption, and corresponding GHG emissions will continue decreasing. FPDP anticipates making an award in FY 2017 for disposition of the PGDP R-114 inventory.	LOW compared to the FY 2015 baseline. HIGH compared to the FY 2008 baseline due to addition of numerous facilities. It is not appropriate to consider the reduction in comparison to FY 2008 due to the change in site operations after 2008.
1.2	25% Scope 3 GHG reduction by FY 2025 from a FY 2008 baseline FY 2016 target: 7%	With the departure of USEC, the employee headcount reported to DOE has increased significantly from a FY 2008 baseline resulting in increased commuter mileage. Beginning in May 2016, FPDP employees began working 9-80s and 4-10 alternate work schedules, reducing emissions from employee vehicles for commutes by 10% when using FY 2015 as a baseline.	The employee headcount for FPDP is not anticipated to change significantly between FY 2016 and FY 2017.	LOW compared to the FY 2015 baseline. HIGH compared to the FY 2008 baseline due to increase number of employees. It is not appropriate to consider the reduction in comparison to FY 2008 due to the change in site operations after 2008.

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
Goal 2: Sustainable Buildings				
2.1	25% energy use intensity (EUI) measured in British thermal units (BTU/GSF) reduction in goal-subject buildings, achieving 2.5% reductions annually, by FY 2025 from a FY 2015 baseline	The FY 2015 Site EUI metrics in the DOE Sustainability Dashboard is 219,530.1 BTU/GSF. The tentative FY 2016 Site EUI is listed as 140,084 BTU/GSF in the DOE Sustainability Dashboard.	By the end of the three-year Deactivation Project, energy consumption will be reduced significantly from pre-delease levels. Planned actions contributing to Goal 2 reductions include utility isolation efforts and relamping with light-emitting diode or light-emitting diode bulbs when fluorescent ballasts fail. FPDP electric usage for FY 2015 was 116,510 megawatt hour (MWh), and FY 2016 was 97,970 MWh for a reduction of 15.9%.	LOW compared to the FY 2015 baseline.
2.2	Energy Independence and Security Act Section 432 energy and water evaluations	100%	During FY 2016, FPDP awarded a subcontract for performance of an American Society of Heating, Refrigerating and Air Conditioning Engineers Level I audit of 25% of the covered FPDP facilities. Walkdowns for the assessment were completed in FY 2016. The final report was issued on November 30, 2016. Results will be reviewed and will be incorporated in future revisions to this plan as appropriate.	LOW
2.3	Meter all individual buildings for electricity, natural gas, steam, and water where life cycle cost-effective and appropriate	Buildings are not individually metered for utilities. Future meters may be considered if determined to be appropriate.	Metering of energy use on unmetered facilities will be evaluated as appropriate based on current and future anticipated use, deactivation and decommissioning schedule, and planned life cycle.	HIGH
2.4	At least 15% (by building count of GSF) of existing buildings greater than 5,000 GSF to be compliant with the revised Guiding Principles (GP) for High Performance and Sustainable Buildings by FY 2025, with progress to 100% thereafter	Facility undergoing deactivation and demolition. Buildings currently are not compliant with GP. Investment to bring facilities into compliance has not been secured.	The Deactivation Project does not include funds to make any of the existing buildings compliant with the GP. Compliance with GP would be dependent on current and future anticipated use, deactivation and decommissioning schedule, planned life cycle, and funding availability consistent with site mission.	HIGH

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
2.5	Efforts to increase regional and local planning coordination and involvement	Facility undergoing deactivation and demolition.	The Deactivation Project does not include funds to construct new buildings/facilities requiring coordination. If projects arise, there will be more opportunity for involvement.	LOW
2.6.a	Net Zero Buildings Percentage of the site's existing buildings above 5,000 GSF intended to be energy and waste, or water net zero buildings by FY 2025	Facility undergoing deactivation and demolition. Buildings currently are not compliant with Net Zero standards. Investment to bring facilities into compliance has not been secured.	The Deactivation Project does not include funds to make any of the existing buildings Net Zero-compliant. The project is focused on deactivating and demolishing facilities and optimizing utilities based on facility current and future use, deactivation and decommissioning schedule, and funding availability.	HIGH
2.6.b	Net Zero Buildings Percentage of new buildings above 5,000 GSF entering the planning process designed to achieve energy Net Zero beginning in FY 2020	Facility undergoing deactivation and demolition. New facilities currently are not budgeted or planned.	No new buildings above 5,000 GSF are anticipated under the Deactivation Project.	LOW
2.7	Data Center Efficiency to establish a power usage effectiveness target in the range of 1.2 to 1.4 for new data centers and less than 1.5 for existing data centers	FPDP does not have any data centers.	FPDP does not have any data centers.	LOW
Goal 3: Clean & Renewable Energy				
3.1	"Clean Energy" requires that the percentage of an agency's total electric and thermal energy accounted for by renewable and alternative energy shall be not less than: 10% in FY 2016–2017, working toward 25% by FY 2025	FPDP has reviewed options to source clean energy and to date the option is cost prohibitive. FPDP will continue to review on-site options for implementing clean energy systems.	Portsmouth/Paducah Project Office (PPPO) has purchased Renewable Energy Certificates in the past and may continue in the future.	HIGH

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
3.2	"Renewable Electric Energy" requires that renewable electric energy account for not less than 10% of a total agency electric consumption in FY 2016–2017, working toward 30% of total agency electric consumption by FY 2025	FPDP has reviewed options to source clean energy and to date the option is cost prohibitive. FPDP will continue to review on-site options for implementing clean energy systems.	PPPO has purchased Renewable Energy Certificates in the past and may continue in the future.	HIGH
Goal 4: Water Use Efficiency and Management				
4.1	36% potable water use intensity (gal/GSF) reduction by FY 2025 from a FY 2007 baseline FY 2016 Target: 18%	Total potable water flow data reported to the Kentucky Division of Water showed a reduction of 5.5% from FY 2015 to FY 2016. FY 2015: 948,768,000 gal FY 2016: 896,444,000 gal	FPDP continues working to replace/repair leaking waterlines to minimize/reduce water losses. As FPDP equipment and systems cease to operate, potable water reductions will continue to be realized.	LOW compared to the FY 2015 baseline. HIGH compared to FY 2007 baseline. It is not appropriate to consider the reduction in comparison to FY 2007 due to the change in site operations after 2007.
4.2	30% water consumption (gal) reduction of industrial, landscaping, and agricultural (ILA) water by FY 2025 from a FY 2010 baseline FY 2016 Target: 12%	Plant water is an alternate water source for FPDP if needed by the C-600 water well and the C-631 Cooling Tower.	Plant water is gravity fed and is not metered.	Plant water is gravity fed and is not metered.

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
Goal 5: Fleet Management				
5.1	30% reduction in fleet-wide per-mile GHG emissions by FY 2025 from a FY 2014 baseline (FY 2016 target: 3% reduction; FY 2017 target: 4% reduction)	Fleet vehicles were increased in FY 2015 with the transition of USEC facilities/operations to DOE. Although FPDP saw reductions in FY 2016 from FY 2015 in General Services Administration (GSA) fleet mileage and diesel and 85% denatured ethanol fuel (E85) fuels, unleaded fuel saw a significant increase. This increase may be attributable to the addition of remediation contractor scope in July 2015. FPDP fleet-wide per-mile GHG increased approximately 55% and are estimated at the following: FY 2015: 485 gCO_2/mile FY 2016: 752 gCO_2/mile	FPDP continues to evaluate the number and type of fleet vehicles required. Augmenting the fleet with hybrid vehicles and minimizing vehicle idling will assist in meeting goals.	HIGH compared to the estimated FY 2015 baseline. HIGH compared to FY 2014 baseline. It is not appropriate to consider the reduction in comparison to FY 2014 due to the change in site operations after 2014.
5.2	20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline; maintain 20% reduction thereafter	Hybrid cars/trucks improve efficiency, but cannot use E85 alternative fuel. With the addition of the remediation contractor scope in July 2015, fleet vehicles, including some hybrid vehicles, was transferred to FPDP. Unleaded fuel consumption increased 206% from FY 2015 to FY 2016. FY 2015: 9,506 gal FY 2016: 29,103 gal	FPDP employees are encouraged to use E85 when appropriate. FPDP continues to evaluate the number and type of fleet vehicles required to accomplish required project activities.	HIGH compared to the estimated FY 2015 baseline. HIGH compared to FY 2005 baseline.

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
5.3	10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter	FPDP saw reductions of almost 30% in E85 usage. The reductions may be attributable to reductions in vehicles using E85. FY 2015: 34,217 gal FY 2016: 24,052 gal	New vehicles were provided by DOE to FPDP at transition on October 21, 2014. Vehicles also were transferred to FPDP during the Remediation Contractor transition in 2015, which increased the size of the fleet and included a number of hybrid and alternate fuel vehicles. Vehicles will be optimized during normal review/replacement schedule. Alternate fuel vehicles will be requested as replacements, based on availability. FPDP will continue to encourage employees to select E85 or biodiesel for vehicles capable of operating on them.	MEDIUM compared to the estimated FY 2015 baseline. LOW compared to FY 2005 baseline.
5.4	75% of light duty vehicle acquisitions must consist of alternative fuel vehicles (AFV) by 2015 and each year thereafter	New vehicles were provided to FPDP at transition on October 21, 2014. Vehicles also were transferred to FPDP during the Remediation Contractor transition in 2015, which increased the size of the fleet and included a number of hybrid and alternate fuel vehicles. Vehicles will be optimized during normal review/replacement schedule.	New light duty vehicles required for the Deactivation project will be AFVs purchased or leased from GSA, based on availability (e.g., alternative fuel readily available without capital infrastructure changes).	HIGH Fleet vehicles provided by DOE at transition did not meet the 75% AFVs.
5.5	20% of passenger vehicle acquisitions consist of zero emission or plug-in hybrid electric vehicles by 2020, working toward a goal of 50% by 2025	FPDP fleet currently does not utilize any zero emission/plug-in hybrid vehicles.	Infrastructure is not available at Paducah Site to support electrical charging of vehicles. Funding has not been allocated to make necessary infrastructure improvements.	HIGH Infrastructure is not available or planned at the Paducah Site to support electrical charge of vehicles.

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
Goal 6: Sustainable Acquisition				
6.1	Promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and bio-based provisions and clauses are included in 95% of applicable contracts	DEAR 952.223-78 is a mandatory flowdown requirement from the Prime Task Order and is included in subcontract terms and conditions, Section I.86.	All new subcontracts contain requirements for products and services to be energy-efficient, water efficient, bio-based, environmentally preferable, non-ozone depleting, containing recycled content, and nontoxic or less toxic alternatives, when applicable.	LOW
Goal 7: Pollution Prevention & Waste Reduction				
7.1	Divert at least 50% of nonhazardous solid waste, excluding construction and demolition debris	FPDP diverted 99% of eligible wastes in FY 2016.	The Deactivation Project will minimize waste generation and recycle paper, aluminum, cardboard, wood pallets, plastic, electronics, and other nonradiological contaminated scrap, to the extent practicable. FPDP successfully reused 814,000 lb of waste lube oil to rinse polychlorinated biphenyl transformers in place of purchasing 105,000 gal of diesel or kerosene. FPDP will continue to divert and transfer items to the Infrastructure Contractor for disposition as part waste minimization/pollution prevention.	LOW
7.2	Divert at least 50% of construction and demolition materials and debris	FPDP diverted 100% of eligible wastes in FY 2016.	Thirteen inactive facilities were demolished during FY 2016. Most were not eligible for recycle/diversion; however, C-601-D and C-801 were diverted.	LOW
Goal 8: Energy Performance Contracts				
8.1	Annual targets for performance contracting to be implemented in FY 2017 and annually thereafter as part of the planning of Section 14 of Executive Order 13693	No Energy Savings Performance Contracts (ESPC) during FY 2016.	Results from an Energy Assessment Report were presented in November 2016. The report includes discussions for energy services company opportunities.	MEDIUM

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
Goal 9: Electronic Stewardship				
9.1	Purchases: 95% of eligible acquisitions each year are EPEAT-registered products	FY 2016 metrics showed 93.4% of FPDP electronic purchases were EPEAT Gold. 100% of FPDP purchases were ENERGY STAR.	EPEAT currently applies to computers, printers, and televisions. FPDP will work to meet this goal with purchases in FY 2017.	LOW
9.2	Power management—100% of eligible personal computers, laptops, and monitors have power management enabled	100%	The Infrastructure Contractor actively has implemented power management on all eligible FPDP computers.	LOW
9.3	Automatic duplexing—100% of eligible computers and imaging equipment have automatic duplexing enabled	100%	The Infrastructure Contractor has enabled all eligible site computers and printers to default to duplex printing.	LOW
9.4	End of Life—100% of used electronics are reused or recycled using environmentally sound disposition options each year	100%	FPDP provides used electronics to Infrastructure Contractor for reuse/recycling because they manage the recycle/reuse of electronic products at Paducah.	LOW
9.5	Data Center Efficiency—Establish a power usage effectiveness target in the range of 1.2–1.4 for new data centers and less than 1.5 for existing data centers	NA	FPDP does not have any current or planned data centers.	LOW
Goal 10: Climate Change Resilience				
10.1	Update policies to incentivize planning for and addressing the impacts of climate change	Emergency Action Plans (EAPs) are in place to address extreme weather-related events.	FPDP will continue to evaluate the effectiveness of the EAPs based on the significant storm and severe weather-related events.	LOW
10.2	Update emergency response procedures and protocols to account for projected climate change, including extreme weather events	FPDP has mutual aid emergency response agreements in place with local agencies. EAPs are in place to address extreme weather-related events.	FPDP will continue to evaluate the effectiveness of the EAPs based on the significant storm and severe weather-related events.	LOW

Table ES.1. Summary Table of Goals and Targets (Continued)

SSPP Goal	DOE Goal	Performance Status Through FY 2016	Planned Action and Contributions	Risk of Non-attainment: High (H), Medium (M), or Low (L)
10.3	Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change	Job Hazards Analysis (JHAs) include consideration of extreme temperatures, heavy rains, and strong winds.	FPDP supports DOE's climate change resilience goals consistent with the scope of the Deactivation Project contract.	LOW
10.4	Ensure site/lab management demonstrates commitment to adaptation efforts through internal communications and policies	FPDP policies/procedures ensure lessons learned and employee feedback are incorporated into plans and procedures. These programs ensure adaptability to new weather events/occurrences as they happen.	FPDP supports DOE's climate change resilience goals consistent with the scope of the Deactivation Project contract.	LOW
10.5	Ensure that site/lab climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary	FPDP policies and programs require consideration of climate impacts to ensure adequate resources and protections are in place.	FPDP supports DOE's climate change resilience goals consistent with the scope of the Deactivation Project contract.	LOW

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1. GOAL 1: GREENHOUSE GAS REDUCTION

The following are U.S. Department of Energy (DOE) supporting greenhouse gas (GHG) goals at the Paducah Site.

- 50% Scope 1 and 2 GHG reduction by fiscal year (FY) 2025 from a FY 2008 baseline (FY 2016 target: 22%)
- 25% Scope 3 GHG reduction by FY 2025 from a FY 2008 baseline (FY 2016 target: 7%)

1.1 PERFORMANCE STATUS

Since the FY 2008 baseline, uranium enrichment operations came to a close in FY 2013 with the previously leased United States Enrichment Corporation (USEC) facilities returned to DOE in October 2014. With this change, the site's real property increased significantly; oversight moved from the Nuclear Regulatory Commission back to DOE; and the mission has changed from uranium enrichment to deactivation, decommissioning, and, ultimately, demolition. The Paducah Gaseous Diffusion Plant (PGDP) FY 2008 metrics did not include PGDP facilities managed by USEC. The USEC-leased facilities and their respective utilities were not required to be tracked as part of the DOE Site Sustainability Program. When USEC facilities were returned to DOE on October 21, 2014, the PGDP gross square footage (GSF) increased from 722,390 GSF to 8,174,722 GSF, which resulted in significant increases in GHG emissions. FY 2015 provides the most meaningful metrics for site progress in meeting site sustainability goals and targets. Because Fluor Federal Services, Inc., Paducah Deactivation Project (FPDP) inherited the majority of the previously leased facilities, FY 2015 metrics provide a more valid comparison.

FPDP's scope of work includes optimization of facility systems and structures to minimize short-term and long-term surveillance and maintenance (S&M) costs. FPDP has identified GHG emissions as a Significant Environmental Aspect under the FPDP Environmental Management System. As facilities are deactivated, energy consumption and GHG emissions associated with the consumption of electricity will decrease.

With the beginning of the FPDP contract, efforts were undertaken to right-size utilities. Utilities have been and continue to be realigned to support the new deactivation mission better. FPDP electrical usage decreased 22% from FY 2015 [116,510 megawatt hour (MWh)] to FY 2016 (97,970 MWh).

During FY 2015 and FY 2016, FPDP completed the following actions to reduce Scope 1 and 2 GHG emissions.

- The three large coal/oil fired boilers were replaced with five modern, modular steam boilers in May/June 2015. The old coal-fired boilers would have required extensive modification to meet new regulatory emission standards. Emissions from the used boilers are estimated to be about 50% of the emissions that would have been generated by the older boilers. The three boilers fire with natural gas; and two boilers fire with natural gas or diesel. The five boilers should run at 80% to 85% efficiency range at 80% capacity. The boilers are tied into the existing steam distribution system. The package boiler system is housed in multiple semitrailers and operates to provide steam on demand. The right-sized modular steam boilers are a reliable source of steam to implement site projects and also provide heat for some office spaces during winter months. The switch from the older coal/oil fire

boilers to the modular boilers resulted in a 215% increase in natural gas usage from FY 2015 (57,474 Mcf) to FY 2016 (180,971 Mcf).

- The site's four outdated and oversized electrical switchyards were consolidated into a single switchyard providing a more efficient and sustainable supply of power. The antiquated switchyards were expensive to maintain and required an enormous amount of electricity to operate. The switchyards reduced power that ran PGDP equipment and support facilities from an incoming 161,000 volts to 14,000 volts. The project was completed in September 2015, ahead of schedule and under budget, and has resulted in a savings of approximately 864 MWh/month.

- During FY 2016, FPDP completed resurfacing roofs on the process buildings that have a footprint of approximately 74 acres. The roof resurfacing consisted of a white Sarnafil polyvinyl chloride membrane material that is recyclable at the end of its useful life, is Energy Smart by reducing energy costs, and has a 30-year warranty. FPDP installed a one-inch thick layer of insulation under the roof membrane to further reduce energy costs.

- Since the beginning of the FPDP contract, 18 facilities have been demolished and 1 trailer administratively archived because it falls under Personal Property; these actions have resulted in an FPDP footprint reduction of 270,870 GSF.

- FPDP has provided employee training regarding site sustainability through General Employee Training and Consolidated Annual Training. An awareness campaign has been conducted through FPDP publications such as Fluor Your Information, Daily Safety Sheet, and Plan of the Day.

During FY 2015 and FY 2016, FPDP completed the following actions aimed at reducing Scope 3 GHG emissions:

- The site employee headcount increased significantly on October 21, 2014, when the USEC-leased facilities were returned to DOE and the FPDP contract began. Beginning in May 2016, FPDP employees began working alternate work schedules of "9-80s" and "4-10s" resulting in reduced emissions from employee vehicles by 10%.

- Recycling and diversion have resulted in diversion of 99% of eligible nonhazardous waste and 100% of eligible construction and demolition waste in FY 2016.

- FPDP includes GHG reduction requirements into subcontracts as appropriate.

- FPDP continues to find more energy efficient mediums such as Webinars for training as opposed to travelling off-site. During FY 2016, the National Training Center was on-site four times to conduct two Basic Instructor Training courses and a Job Analysis and Curriculum Development course. These were 40-hour classes.

- A Carpool Board has been added to the FPDP intranet homepage. The board provides employees interested in carpooling the opportunity to exchange information.

1.2 PLANS AND PROJECTED PERFORMANCE

During FY 2017, FPDP has planned the following projects/activities to reduce GHG Scope 1 and 2 emissions.

- FPDP anticipates awarding a contract for disposition of the PGDP inventory of approximately 8.5 million pounds of R-114. The scope of the contract is to convert the R-114 to environmentally safe end-products, by-products, and emissions.

- The C-633 and C-637 Cooling Tower utilities should be isolated, thereby eliminating the need to heat or operate the two facilities. The estimated annual MWh to operate each facility is approximately 250 MWh.

- Utility isolations in C-400 should result in reducing electrical consumption by approximately 1,800 MWh per year.

- The C-535 and C-537 switchyard bypass by the power suppliers were completed by December 2016. Some efficiency will be gained by shutting down oil circuit breaker cabinet heaters and compressors and selected switchyard lighting. Other efficiencies will be gained in the future when utilities are isolated. Each switchyard consumes about 800 MWh per year.

- Work requests have been submitted to disconnect two 4160-V booster substations in C-531 and C-533 (four total) that will not be serving load. Shutting down each unit will save about 100 MWh annually in transformer no load losses.

- Fluorescent lighting will be replaced with more efficient light-emitting diode (LED) lighting as existing ballasts fail, where appropriate.

- Evaluate additional opportunities for GHG reduction, such as reducing number and use of fleet vehicles, increasing use of biodiesel/E85, procuring more efficient equipment, and isolating facilities from utility systems when no longer needed.

FPDP FY 2017 has planned the following future actions to reduce GHG Scope 3 emissions.

- FPDP alternate work schedules will continue in FY 2017, continuing reductions in emissions from employee vehicles by 10%.

- FPDP subcontracts will continue to include GHG reduction requirements, where appropriate.

- FPDP will continue to find more energy-efficient mediums for training such as Webinars as opposed to travelling off-site. To reduce travel, training will be held on-site again during FY 2017.

- FPDP will evaluate additional opportunities for GHG reductions, such as considering work from home, reducing travel, promoting car pools, consolidating waste shipments, shipping waste by rail (when available), and using teleconferencing.

- FPDP will continue promoting recycling and diversion of eligible nonhazardous waste and construction and demolition materials and debris.

- FPDP will continue training to promote site sustainability and awareness.

2. GOAL 2: SUSTAINABLE BUILDINGS

DOE has the following sustainable buildings performance goals:

- 25% energy intensity [British thermal unit (BTU) per GSF] reduction in goal-subject buildings, achieving 2.5% reductions annually by FY 2025 from a FY 2015 baseline;

- Energy Independence and Security Act (EISA) Section 432 energy and water evaluations, benchmarking, project implementation, and measures follow up;

- Meter all individual buildings for electricity, natural gas, steam and water, where cost-effective and appropriate;

- At least 17% (by building count or GSF) of existing buildings greater than 5,000 GSF to be compliant with the revised Guiding Principles for High Performance and Sustainable Buildings (HPSB) by FY 2025, with progress to 100% thereafter;

- Efforts to increase regional and local planning coordination and involvement;

- Beginning in FY 2025 and thereafter, DOE will be required to ensure 1% of existing buildings above 5,000 GSF are energy, waste, or water Net Zero buildings; and

- Beginning in FY 2020 and thereafter, all new construction of buildings greater than 5,000 GSF that enters the planning process shall be designed to achieve energy Net Zero and, where feasible, water or waste Net Zero by FY 2030.

2.1 PERFORMANCE STATUS

The FPDP task order contract includes optimization of facility systems and structures to minimize short-term and long-term S&M costs. As facilities are deactivated, energy and water consumption will decrease. During performance of work, utilities are being right-sized to supply the reduced loads efficiently. Existing energy and water use meters are maintained, as appropriate, unless energy or water service has been eliminated from that facility. Adding metering to currently unmetered facilities will be evaluated for cost-effectiveness using DOE's cost-benefit analysis guidelines during optimization of utility operations. FPDP will work with DOE to evaluate increased purchase of electricity from renewable energy resources to the extent it is cost-effective as utility contracts are renegotiated. The DOE Sustainability Dashboard lists the FY 2015 energy use intensity (EUI) as 219,530 BTU/GSF for the site. The FY 2016 EUI is anticipated to be reduced due to reductions in electrical usage. As of September 30, 2016, a total of 19 facilities have been archived under FPDP with 18 of those having been demolished. These changes reduced the GSF used to calculate EUI. Presently, FPDP does not have any existing buildings that meet the HPSB requirements; and there are no new FPDP facilities greater than 5,000 GSF planned. FPDP facilities typically are older, without metering, and lack renewable energy generation. As opportunities present themselves through S&M activities, upgrades to heating, ventilation, and air conditioning units will be implemented.

During FY 2016, the following efforts were completed to achieve Goal 2.

- Cool roofs were installed on all the process buildings. The roof resurfacing consisted of a Sarnafil polyvinyl chloride membrane material, which is recyclable at the end of its useful life, is Energy Smart by reducing energy costs, and has a 30-year warranty. A 1-inch thick layer of insulation was installed under the roof membrane to reduce energy costs further.

- During FY 2016, an engineering equivalency was prepared for replacement of fluorescent lighting with LED lighting as existing ballasts fail.

- The site's four outdated and oversized electrical switchyards were consolidated into a single switchyard, providing a more efficient and sustainable supply of power.

- FPDP awarded a subcontract for performance of an American Society of Heating, Refrigerating and Air Conditioning Engineers Level I audit of 25% of the covered FPDP facilities. The energy assessment covered approximately 28% of the FPDP GSF and identified facility improvement measures in areas such as lighting, steam, heating/cooling, and water. The energy assessment report was issued in November 2016.

- Promoted energy awareness in publications such as the Daily Safety Sheet, Plan of the Day, and Fluor Your Information.

2.2 PLANS AND PROJECTED PERFORMANCE

FPDP FY 2017 has the following planned actions to achieve Goal 2.

- The C-535 and C-537 switchyard bypass by the power suppliers should be completed by December 2016. Some efficiency will be gained by shutting down oil circuit breaker cabinet heaters and compressors and selected switchyard lighting. Other efficiencies will be gained in the future when utilities are isolated. Each switchyard consumes about 800 MWh per year.

- Work requests have been submitted to disconnect two 4160-V booster substations in C-531 and C-533 (four total) that will not be serving load. One has been disconnected to date. The other three should follow. Shutting down each unit will save about 100 MWh annually in transformer no load losses.

- The C-633 and C-637 Cooling Tower utility isolations will eliminate the need to heat or operate these two facilities. The estimated annual MWh to operate each facility is approximately 250 MWh.

- Fluorescent light bulbs will be replaced with LED bulbs when existing ballasts fail as part of general S&M activities.

- FPDP will evaluate the options presented in the November 2016 energy assessment report and will pursue opportunities as appropriate.

3. GOAL 3: CLEAN & RENEWABLE ENERGY

DOE has the following renewable energy goals:

- "Clean Energy" requires that the percentage of an agency's total electric and thermal energy accounted for by renewable and alternative energy shall be not less than 10% in FY 2016–2017, working toward 25% by FY 2025.

- "Renewable Electric Energy" requires that renewable electric energy account for not less than 10% of a total agency electric consumption in FY 2016–2017, working toward 30% of total agency electric consumption by FY 2025.

3.1 PERFORMANCE STATUS

FPDP has no on-site renewable energy generation capability. FPDP has reviewed options to source clean energy; however, to date, the option is cost prohibitive. FPDP will continue to review on-site options for implementing clean energy systems.

FPDP has nine air monitoring stations powered by solar panels. Approximately 2,800 kilowatt hour is saved per year with the use of solar panels at these locations.

3.2 PLANS AND PROJECTED PERFORMANCE

In the past, the DOE Portsmouth/Paducah Project Office (PPPO) purchased Renewable Energy Certificates for the Paducah Site. DOE PPPO may continue to do so in the future.

4. GOAL 4: WATER USE EFFICIENCY AND MANAGEMENT

DOE has the following water use efficiency and management supporting goals:

- 36% potable water intensity (gal per GSF) reduction by FY 2025 from a FY 2007 baseline; and
- 30% consumption reduction of industrial, landscaping, and agricultural (ILA) water by FY 2025 from a FY 2010 baseline.

4.1 PERFORMANCE STATUS

Due to the return of the previously leased facilities to DOE, the site potable water numbers have increased drastically from a FY 2007 baseline. FPDP operates and maintains the C-611 Water Treatment Plant that provides potable water to PGDP. With the large GSF increase for the site, FY 2015 metrics for potable water provide meaningful metrics for future comparison.

There were 948,768,000 gal of potable water reported to the Kentucky Division of Water for FY 2015. The FY 2016 total potable flow data reported to the Kentucky Division of Water on FPDP's Monthly Operation Report was 896,624,000 gal. The gallons of potable water are recorded on flow meters located at the C-611 Water Treatment Plant. The total potable water flow data reported to the Kentucky Division of Water showed a reduction 5.5% from FY 2015 to FY 2016.

Plant water serves as an alternate water source to the C-600 chilled water well and the C-631 Cooling Tower. Plant water is fed to the depleted uranium hexafluoride facility. This source is gravity fed and is not metered.

4.2 PLANS AND PROJECTED PERFORMANCE

FPDP continues work to identify and replace system water leaks. Potable water is required for operation of plant equipment and systems such as the air compressors that support the criticality accident alarm systems. As FPDP equipment and systems cease to operate, potable water reductions will continue to be realized.

5. GOAL 5: FLEET MANAGEMENT

DOE has the following fleet management supporting goals:

- 30% reduction in fleet-wide per-mile GHG emissions by FY 2025 from a FY 2014 baseline (FY 2016 target: 3%; FY 2017 target: 4% reduction);
- 20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline; maintain 20% reduction thereafter;
- 10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter;
- 75% of light duty vehicle acquisitions must consist of alternative fuel vehicles (AFV) by 2015 and each year thereafter; and
- 20% of passenger vehicle acquisitions consist of zero emission or plug-in hybrid electric vehicles by 2020, working toward a goal of 50% by 2025.

5.1 PERFORMANCE STATUS

New vehicles were provided to FPDP at transition on October 21, 2014. Vehicles also were transferred to FPDP during the Remediation Contractor transition in 2015; this increased the size of the fleet and included a number of hybrid and alternate fuel vehicles.

Site metrics for fuel and mileage increased significantly in FY 2015 due to increased work scope associated with management of formerly leased USEC facilities, increased number of employees moving around PGDP, and transition of Remediation Contractor scope to FPDP in July 2015. With the return of the previously leased facilities/operations to DOE in FY 2015, more meaningful comparisons can be drawn using FY 2015 for fleet management metrics.

FPDP saw reductions in FY 2016 from FY 2015 metrics in Government Services Administration (GSA) fleet mileage and diesel and E85 fuels; however, unleaded fuel saw a significant increase.

5.2 PLANS AND PROJECTED PERFORMANCE

FPDP manages the fleet in accordance with DOE's sustainability goals. FPDP continues to evaluate the need for the number/type of vehicles in use. FPDP encourages employees to select E85 or biodiesel for vehicles capable of operating on them.

As new vehicles are obtained, preference will be given to AFVs (i.e., vehicles that can operate on E85 or biodiesel) that are available for purchase or lease through GSA. The FPDP fleet manager continues to request that GSA provide AFVs at every opportunity. Augmenting the fleet with hybrid vehicles and minimizing vehicle idling will assist in meeting fleet management goals.

6. GOAL 6: SUSTAINABLE ACQUISITION

DOE has the following sustainable acquisition goal:

- Promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and bio-based provisions and clauses are included in 95% of applicable contracts.

6.1 PERFORMANCE STATUS

FPDP procurement procedures ensure all federally mandated designated products and services are included in all relevant procurements. DEAR 952.223-78, *Sustainable Acquisition Program*, is a mandatory flowdown requirement from the Prime Task Order and is included in subcontract terms and conditions, Section I.86. The nature of the scope of work in construction subcontracts is repair/maintenance or demolition and does not lend itself to opportunities for sustainable program improvements.

6.2 PLANS AND PROJECTED PERFORMANCE

FPDP will assess contract actions to maximize the supply or use of products and services that are energy efficient (ENERGY STAR or Federal Energy Management Program-registered products); water efficient; bio-based; environmentally preferable (including Electronic Product Environmental Assessment Tool-registered products); non-ozone depleting; contain recycled content, nontoxic, or less toxic alternatives, as appropriate. Additionally, FPDP will check the federal excess supply lists for available equipment/materials prior to purchasing new.

7. GOAL 7: POLLUTION PREVENTION & WASTE REDUCTION

DOE has the following pollution prevention and waste reduction supporting goals:

- Divert at least 50% of nonhazardous solid waste, excluding construction and demolition debris; and
- Divert at least 50% of construction and demolition materials and debris.

7.1 PERFORMANCE STATUS

FPDP is committed to the practice of sustainable performance, preventing pollution, and minimizing waste generation. The objectives of the FPDP pollution prevention and waste minimization program are described in the FPDP Pollution Prevention/Waste Minimization Plan. FPDP provides Quarterly Project Waste Management/Pollution Prevention metrics to DOE.

When the site's coal powered boilers were shut down, surplus coal was left at the facility. During FY 2016, DOE transferred almost 9,600 tons of the surplus coal to a local community reuse organization. The transfer helped move DOE forward in cleanup of the site while providing surplus assets to support economic development in the community. During the first quarter of FY 2017, FPDP has diverted and transferred over 20,000 lb of items to the Infrastructure Contractor for disposition. These transfers include industrial clothes dryers from C-400, air compressors, a hematology machine, and stair ladders.

FPDP continues to minimize waste by using plastic monitoring well bollard covers instead of repainting, placing excavated gravel/soil back to its point of origin to the extent practical, returning equipment to vendors, and reusing steel plates on contaminated soil to prevent contamination of equipment tracks, and generation of decontamination solutions.

In FY 2016, FPDP has recycled, reused, or diverted the following:

- 59,000 lb of paper recycled
- 839,500 lb of reused lube oil to rinse polychlorinated biphenyl transformers
- 16,780 lb of totes reused for other projects after initial use
- 1,760 lb of pallets reused
- 272,700 lb of scrap metal recycled from demolition of C-601-D and C-801
- 5,800 lb of metal components diverted for reuse instead of scrap
- 5,900 lb of spent lamps recycled
- 28,000 lb of batteries recycled
- 404 tons of dense-grade aggregate for reuse

7.2 PLANS AND PROJECT PERFORMANCE

FPDP supports DOE submittal of reports under Emergency Planning and Community Right-to-Know Act. The Infrastructure Contractor provides janitorial and recycling support for the Paducah Site. FPDP encourages employees to segregate recyclable items into groups such as electronics, printer cartridges, paper, aluminum, plastic, steel, and cardboard to support the recycling effort at the Paducah Site. As applicable, FPDP coordinates vehicle maintenance with the Infrastructure Contractor to recycle vehicles/equipment, used tires, and used motor oil.

FPDP minimizes the generation of solid waste through use of duplex printing on applicable printers and electronic submittal of official documents to DOE whenever possible. FPDP minimizes regulated waste generation through removal of packaging materials before an item is moved into a radiological/contamination area, selection of products/chemicals that do not contain hazardous constituents, and segregation of waste types.

FPDP is committed to continued diversion and transfer of items to the Infrastructure Contractor for disposition. FY 2017 plans for diversion include items such as the following:

- Scrap metal from the 14kV project
- Pressure relief valves
- Diesel generator
- Small electric forklift

FPDP continues to look for ways to increase segregation and recycle/reuse of sanitary waste; increase the number of recycle receptacles in each building; and achieve recycle awareness through distribution of articles and information in the Daily Safety Sheet, Plan of the Day, and Fluor Your Information.

8. GOAL 8: ENERGY PERFORMANCE CONTRACTS

DOE has the following energy performance contract supporting goals:

- Characterize and provide examples of efforts to leverage alternative financing such as ENABLE, energy savings performance contract (ESPC), UESC, and PPA;
- Describe the site's approach for evaluating project potential, noting projects that have been evaluated in the past five years; and
- Describe challenges to use of alternative finance vehicles and provide recommended solutions.

8.1 PERFORMANCE STATUS

During FY 2016, FPDP issued a subcontract to perform specific energy management program reviews and facility inspections. The intent of the effort was to provide an assessment of FPDP programmatic compliance with EISA Facility Management Approach requirements and development of preliminary recommendations for potential energy and water efficiency projects. The on-site visits/evaluations were conducted during FY 2016. The identified project opportunities were assessed for potential of being accomplished in partnership with an energy services company in an ESPC or self-performed by FPDP.

8.2 PLANS AND PROJECTED PERFORMANCE

The Energy Assessment Report results and final report were presented to FPDP in November 2016. FPDP will evaluate the options presented and pursue opportunities as appropriate. Any use of ESPCs would require approval from DOE.

9. GOAL 9: ELECTRONIC STEWARDSHIP

DOE has the following Electronic Stewardship supporting goals:

- Purchases—95% of eligible acquisitions each year are EPEAT-registered products;
- Power management—100% of eligible desktops, laptops, and monitors have power management enabled;
- Automatic duplexing—100% of eligible computers and imaging equipment have automatic duplexing enabled;
- End of Life—100% of used electronics are reused or recycled using environmentally sound disposition options each year; and
- Data Center Efficiency—Establish a power usage effectiveness target in the range of 1.2-1.4 for new data centers and lower than 1.5 for existing data centers.

9.1 PERFORMANCE STATUS

FPDP's objective is to meet all goals possible to help reduce electrical consumption and increase reuse and recycling of obsolete machines and equipment. As part of the infrastructure contract, the contractor maintains and operates the Paducah local area network and provides these services to FPDP. The

Infrastructure Contractor maximizes the selection of items with power management capabilities and features that shut down monitors when systems are logged off. Prior to placing equipment into service, the Infrastructure Contractor activates power management capabilities and default duplex printing.

FPDP requires items for purchase to be evaluated for EPEAT unless there is a legitimate reason why the items are not appropriate for the application. During FY 2016, FPDP procured electronic notebooks, monitors, multifunction devices, and televisions. From these purchases, 93.4% were rated as EPEAT Gold. All electronic products purchased were rated Energy Star.

Eligible FPDP copiers automatically default to duplex printing capabilities. A new lease for copiers become effective in FY 2016 replacing 108 of the existing leased copiers. The newly leased copiers have power management capabilities activated and automatic default duplexing enabled. The replaced copiers were taken out of service and returned to the vendor.

After FPDP computers are purchased, they are turned over to the Infrastructure Contractor for management as part of their infrastructure contract responsibilities.

9.2 PLANS AND PROJECTED PERFORMANCE

Performance should continue to be strong for purchasing EPEAT-registered products. When eligible computers and imaging equipment are upgraded, energy efficiency measures will be put in place.

10. GOAL 10: CLIMATE CHANGE RESILIENCE

DOE has the following climate change resilience supporting goals:

- Update policies to ensure planning for, and addressing the impacts of, climate change;
- Update emergency response procedures and protocols to account for projected climate change, including extreme weather events;
- Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change;
- Ensure site/lab management demonstrates commitment to adaptation efforts through internal communications and policies;
- Ensure that site/lab climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary; and
- Complete Dashboard climate change resiliency survey.

10.1 PERFORMANCE STATUS

FPDP is responsible for the overall Emergency Management and Fire Services direction and control at PGDP. The FPDP Emergency Management Program is designed to comply with federal, state, and local regulations, which include maintaining Letters of Agreement and relations with off-site agencies and

service procedures. The FPDP Paducah Site Emergency Program does not address Climate Change Resilience; there are procedures and Emergency Action Plans (EAPs) in place to address extreme weather-related events. FPDP has mutual aid emergency response agreements in place with local agencies. Climate change is not addressed in mutual aid emergency response agreements or EAPs. FPDP has made no local partnerships with federal agencies or local jurisdictions for collaboration or exploration of local climate change.

The Infrastructure Contractor is the site lead for the Site Sustainability Plan and has responded to the questions in the DOE Dashboard Climate Change Resiliency Survey. FPDP provided input to the Infrastructure Contractor in completing the survey.

10.2 PLANS AND PROJECTED PERFORMANCE

FPDP will continue to evaluate the effectiveness of EAPs based on the significant storm and severe weather related events.