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POLLUTION PREVENTION AND WASTE MINIMIZATION (P2WM) PLAN

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REVISION LOG			
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ACRONYMS

MCS	Mid-America Conversion Services, LLC
DOE	U.S. Department of Energy
DEAR	Department of Energy Acquisition Regulation
DUF ₆	Depleted uranium Hexafluoride
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPEA	Electronic Products Environmental Assessment Tools
ES&H	Environment Safety and Health
FAR	Federal Acquisition Regulations
FEMP	Federal Energy Management Program
P2WM	Pollution Prevention Waste Minimization
PPA	Pollution Prevention Act
PPE	Personal Protection Equipment
LFG	Landfill Gas
RCRA	Resource Conservation and Recovery Act
WTS	Waste to Energy

EXECUTIVE SUMMARY

This Plan describes the Mid-America Conversion Services, LLC (MCS) Pollution Prevention and Waste Minimization Program. MCS is committed to managing and operating the Paducah and Portsmouth DUF₆ facilities in a manner that minimizes the impact of operations on the environment by using sustainable practices for energy efficiency, pollution prevention, recycling/reuse, source reduction, resource conservation, and environmentally preferable purchasing

1 PURPOSE

The purpose of this plan is to establish the policy, goals, and roles and responsibilities for the pollution prevention/waste minimization (P2WM) program for Mid-America Conversion Services, LLC (MCS).

2 SCOPE

The program will obtain top management commitment, determine and implement initiatives, and set programmatic goals. Moreover, this P2WM program will allow MCS to demonstrate compliance with regulatory requirements, to take credit for P2WM activities and integrate Environmental Management System (EMS) principles into waste management activities.

The activities required to implement a comprehensive program include:

1. Determine acceptable and achievable goals;
2. Establish management commitment to P2WM goals;
3. Perform waste assessments;
4. Characterize waste streams and resource consumption;
5. Identify opportunities to eliminate, reduce, reuse, or recycle;
6. Assess feasibility and cost/benefits of those opportunities;
7. Implement selected opportunities; and
8. Document and evaluate waste minimization progress.

3 P2WM DRIVERS

The Regulatory Drivers, DOE Orders and contract requirements for P2WM and their associated impacts and requirements to the MCS program are listed in Table 1.

Table 1. P2WM Regulatory Drivers, DOE Orders and Contract Requirements

The Pollution Prevention Act (PPA) of 1990	Federal law established a National policy for pollution prevention.
DOE Order 436.1, "Departmental Sustainability"	Requires contractors to develop or support development and commitments to identify respective contributions toward meeting the DOE sustainability goals and to utilize the EMS as a management tool to improve environmental performance.
DOE Order 435.1, "Radioactive Waste Management"	Requires compliance with DOE M 435.1-1 which includes the development of waste management plans and actions to minimize radioactive waste generation.
Clean Air Act	Directs the Environmental Protection Agency (EPA) to consider pollution prevention technologies when selecting maximum achievable control technology.
Clean Water Act	Directs EPA to promote the inclusion of pollution prevention technologies in industrial effluent standards, and promote source reduction in industrial water effluent guidelines. In addition, it requires industrial storm water discharge facilities to have an on-site pollution prevention plan.
Resource Conservation and Recovery Act (RCRA) 40 CFR 262.41	Requires a biannual Hazardous Waste Report which includes waste minimization efforts.
Waste Minimization National Plan of 1994	Sets national goals for reducing constituents in hazardous waste that are persistent, bio-accumulative, and toxic. The Plan consists of five national objectives: (1) development of a framework for setting national priorities; (2) promotion of multimedia environmental benefits and prevention of cross media transfers; (3) demonstration of a strong preference for source reduction; (4) clear definition and tracking of progress, promoting accountability for EPA, states, and industry; and (5) involvement of citizens in waste minimization implementation decisions.
DEAR 952.223-78	Contract requirement for "Sustainable Acquisition Program"
DEAR 970.5223-6	Contract requirement for compliance with Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management"
FAR 52.223-5	Contract requirement for "Pollution Prevention and Right-to-Know Information"
FAR 52.223-10	Contract requirement for "Waste Reduction Program"
FAR 52.223-2	Contract requirement for "Affirmative Procurement of Bio-based Products Under Service and Construction Contracts"

4 INTRODUCTION

Pollution Prevention/Waste Minimization (P2WM) is reducing or eliminating waste at the source by modifying production processes, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than putting them into the waste stream.

The waste management hierarchy (Figure 1) shall be used as a tool to determine the priorities of P2WM. The waste management hierarchy is:

1. Source Reduction & Reuse – The most effective way to reduce waste is to not create it in the first place.
2. Recycling/Composting – Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products.
3. Energy Recovery – Energy recovery from waste is the conversion of non-recyclable waste materials into useable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolyzation, anaerobic digestion, and landfill gas (LFG) recovery. This process is often called waste-to-energy (WTE).
4. Treatment & Disposal – Any process that changes the physical, chemical, or biological characteristics of a waste to minimize its threat to the environment.



Figure 1. Waste Management Hierarchy

5 RESPONSIBILITIES

In pursuit of the P2WM goals, key responsibilities have been identified and are listed below:

- The Plant Manager is responsible for ensuring the site's commitment to a successful P2WM program which includes review and approval of established goals and milestones.
- The Site P2WM Coordinator has the following specific responsibilities:

Promote waste reduction,

Provide guidance to site personnel on implementing effective P2WM activities;

Prepare and submit required reports;

Manage the routine recycling program for the site;

Assist with P2WM program assessments;

Track progress toward accomplishing site P2WM goals;

Participate as a member of the site EMS Team

Review and update, if necessary, the P2WM program plan, annually;

Research waste minimization methods and new technologies;

Disseminate information on the status of P2WM activities;

Assist with P2WM program training for the site personnel; and

Address P2WM issues and activities during independent assessments.

- Procurement is responsible for implementing environmentally preferable purchasing which is in line with the DOE contract requirements and DOE Site Sustainability Plans.
- Training is responsible for providing a management brief that communicates the pollution prevention and waste minimization goals to all employees.
- The Site Environment, Safety & Health (ES&H) Manager is responsible for ensuring compliance with the regulatory drivers listed in Section 3 of this plan and will closely coordinate activities with the Site P2WM Coordinator.
- All employees generate waste and are, therefore, waste generators. The waste generators have the following specific responsibilities:

Plan and implement the P2WM projects in accordance with the P2WM principles documented in this plan;

Incorporate P2WM principles in accordance with the P2WM and strategies into program procedures and work control processes, as appropriate;

Support the development and implementation of new P2WM techniques;

Implement source reduction, materials reuse, environmentally preferable purchasing, and recycling activities; and

Report any new possible P2WM techniques to the Site P2WM Coordinator.

6 POLICY

The MCS *Environment, Safety and Health Policy* (DUF6-POL-060) affirms the commitment to manage and operate the Paducah and Portsmouth DUF6 conversion facilities in a manner that minimizes the impact of operations on the environment by using sustainable practices for energy and water efficiency, pollution prevention, recycling/reuse, source reduction, resource conservation, and environmentally preferable purchasing.

7 P2WM OBJECTIVES, GOALS, AND TECHNIQUES

The following strategies and goals will be initiated as part of this plan to form a comprehensive P2WM program. If required, additional procedures will be implemented to formalize routine activities.

7.1 OBJECTIVE

The objective of the P2WM program is to reduce or, where possible, eliminate the amount, toxicity, and mobility of wastes generated by MCS and its subcontractors. Additional program objectives include:

- *Promote the use of non-hazardous materials in activities to minimize the potential risks to human health and the environment.*
- *Eliminate the generation of waste materials through source reduction, material substitution, technology innovations, recycling, volume reduction, segregation, free-release, and inventory control.*
- *Develop and implement programs to encourage employee participation in P2WM programs.*

7.2 GOALS

MCS is committed to setting and meeting pollution prevention and energy and water efficiency goals to support the DOE goals established in the DOE Site Sustainability Plans and set as part of the MCS EMS for the Paducah and Portsmouth sites. Several of the key goals are as follows:

- Waste Diversion and Pollution Prevention:

Support the DOE goal to achieve a fifty percent (50%) non-hazardous solid waste (excluding construction and demolition debris) diversion rate by Fiscal Year (FY) 2015;

- Procurement:

Each year ensure ninety-five percent (95%) of new non-stock order items are energy and water efficient, biobased, environmentally preferable, generally non-toxic, and contain recycled materials;

Purchase lower risk chemicals and toxic materials;

Procure products that are [Electronic Product Environmental Assessment Tool](#) (EPEAT)-registered, ENERGY STAR® labeled, or Federal Energy Management Program (FEMP)-designated equipment;

Purchase printing and writing paper with thirty percent (30%) postconsumer content; and

- Waste Reduction

Support the EMS objective to minimize the generation of hazardous waste.

7.3 TECHNIQUES

Utilization of waste minimization and pollution prevention techniques in day-to-day activities is an important component to the program. MCS will implement techniques and activities that use, reuse, or reclaim a material from a waste stream. Examples of techniques and activities to be evaluated and/or implemented at the MCS plants are listed below.

- Segregation of packaging materials in the receiving areas;
- Reduction of plants paper use through duplex printing;
- Reuse of respirator;
- Reusable laundry items to include personal protective equipment (PPE);
- Recycling of office paper;
- Reuse wood pallets to secure drums during shipments;
- Refurbishment of toner cartridges;
- Recycling of aluminum /plastics;
- Recycling of poly-peanuts;
- Recycling of tires/used oils/electronic circuit boards;
- Recycling of batteries;
- Recycling of fluorescent tube/ballasts; and
- Decontamination of equipment.

Additional activities and techniques will be evaluated as recommended through employee initiative programs and process review by the Site P2WM Coordinator working closely with the Plant Operations Director and Engineering.

8 TRAINING

MCS Training organization will provide effective training to ensure communication of waste minimization and pollution prevention goals and techniques which are important to achieving a successful program. Each employee will be trained and made aware of waste generation and its impact on the site and the environment, and, in addition, employees will be shown ways waste can be reduced, thus, preventing pollution. The Site P2WM Coordinator will work with area personnel to assist in the evaluation of their specific processes and determine where waste materials can be prevented or minimized.

The MCS P2WM program is designed to define and enhance the priority of practicing waste generation control, which is key element in reducing waste management costs. MCS training program will emphasize the application of waste minimization principles throughout the decision-making process.

9 TRACKING AND REPORTING SYSTEMS

The Site P2WM Coordinator at each site will collect recycle/pollution prevention data; establish tracking and trending (refer to DUF6-U-WMP-2013, *Waste Minimization* and DUF6-U-CPL-0019, *Trending*) and will provide the data annually to the Environmental Program Manager and EMS Champion for submittal to the DOE and regulators.

An annual management assessment will be conducted by the Site WM&T P2WM Coordinator working closely with the Site ES&H Manager to determine the effectiveness of the P2WM plan. Refer to DUF6--PLN-130, *DUF6 Oversight Plan* and DUF6-U-QAP-0013, *Management Assessment* for performing the assessment.

10 ATTACHMENTS

- Attachment A. *Reference*

ATTACHMENT A. REFERENCES

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DUF6-POL-060, *Environment, Safety and Health Policy*

DUF6-U-CPL-0019, *Trending*

DUF6-U-QAP-0012, *Independent Assessment*

DUF6 -U-QAP-0012-F01, *Assessment Finding/Observation Report*

DUF6-U-QAP-0013, *Management Assessment*

DUF6-U-WMP-2013, *Waste Minimization*

DE-EM0004559, *Mid-America Conversion Services, LLC Department of Energy Contract*

DOE/PPPO/03-0438&D1, *Site Sustainability Plan for the Portsmouth Gaseous Diffusion Plant*

DUF6- PLN-130, *DUF6 Oversight Plan*

SST.SSP-0001/R1, *Site Sustainability Plan for the Paducah Gaseous Diffusion Plant*

END OF DOCUMENT