

Mr. W. Don Seaborg  
Paducah Site Manager  
Department of Energy  
P.O. Box 1410  
Paducah, KY 42002-1410

Subject: Action Memorandum for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant  
(DOE/OR/07-1965&D1), McCracken County, Kentucky, Permit # KY8-890-008-982

Dear Mr. Seaborg:

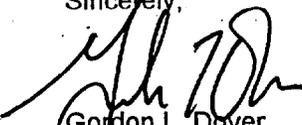
Enclosed are 21 copies of the *Action Memorandum for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1965&D2) document for your review and approval. Fourteen copies are to be transmitted to the following at the state regulatory agencies: Ms. Gaye Brewer, Mr. Robert Daniell (seven), Mr. Steve Hampson, Mr. Tony Hatton, Mr. Tuss Taylor (two), Mr. John Volpe, and Mr. Mike Welch. Four copies are to be transmitted to the following at the U.S. Environmental Protection Agency: Mr. Jeff Crane, and Mr. Carl Froede (three). The remaining three copies are for your use. This document is being distributed in accordance with the *Standard Distribution List for Bechtel Jacobs Company LLC Primary and Secondary Documents (08/30/01)*. Also enclosed is suggested text for your use in transmitting the documents to the regulatory agencies.

The changes to the enclosed document were a result of discussions between the Department of Energy and the Commonwealth of Kentucky regarding the preparation of a risk evaluation for the placement of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 derived wastes into the C-746-U Landfill, which is located at the Paducah Gaseous Diffusion Plant. The letter from the Commonwealth of Kentucky, dated August 28, 2001, requested the revision to the document to acknowledge those discussions. The revised D2 document fulfills Commitment No. DOE-PAD-01-0056.

As a result of that request, a footnote has been added to the D2 Action Memorandum (as part of the last bullet under the "Proposed Activities" on Page three), describing the risk evaluation action and noting its use.

If you have any questions, please contact Tom Wheeler of my staff at 5118.

Sincerely,



Gordon L. Dover  
Paducah Manager of Projects

Enclosures: 1. D2 Action Memorandum  
2. Suggested text

GLD:ll  
LTR-PAD/EP-LL-01-0100

c: Distribution

Mr. W. Don Seaborg  
Page 2  
September 20, 2001

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Carl Froede Jr., P.G.  
United States Environmental Protection Agency  
Region 4  
DOE Remedial Section  
Federal Facilities Branch  
Waste Management Division  
61 Forsyth Street  
Atlanta, GA 30303

Michael V. Welch, P.E.  
Manager  
Hazardous Waste Branch  
Kentucky Department for Environmental Protection  
14 Reilly Road, Frankfort Office Park  
Frankfort, KY 40601

Dear Mr. Froede and Mr. Welch:

**ACTION MEMORANDUM FOR SCRAP METAL DISPOSITION AT THE PADUCAH GASEOUS  
DIFFUSION PLANT (DOE/OR/07-1965&D1), MCCRACKEN COUNTY, KENTUCKY,  
PERMIT # KY8-890-008-982**

The *Action Memorandum for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1965&D2) document is enclosed for your review and approval, in accordance with Paducah Gaseous Diffusion Plant (PGDP) regulatory commitments. The changes to the enclosed document were a result of discussions between the Department of Energy and the Commonwealth of Kentucky regarding the preparation of a risk evaluation for the placement of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 derived wastes into the C-746-U Landfill, which is located at PGDP. The letter from the Commonwealth of Kentucky, dated August 28, 2001, requested the revision to the document to acknowledge those discussions.

As a result of that request, a footnote has been added to the D2 Action Memorandum (as part of the last bullet under the "Proposed Activities" on Page three), describing the risk evaluation action and noting its use. Prompt review and approval of the document is needed in order to minimize the field activities during the unfavorable winter months.

Please call Raúl Castañeda of my staff at (270) 441-6809 if you have any questions, or require additional information.

Sincerely,

W. Don Seaborg, Site Manager  
Paducah Site Office

Enclosure

cc w/enclosure:

G. Brewer, KDEP/Paducah  
J. L. Crane, EPA/Atlanta  
R. H. Daniell, KDEP/Frankfort  
S. Hampson, RCB/Frankfort  
T. Hatton, KDEP/Frankfort  
T. M. Taylor, KDEP/Frankfort  
J. A. Volpe, RCB/Frankfort

cc w/out enclosure:

E. L. Berglund, BJC/Kevil  
DMC/Kevil  
G. L. Dover, BJC/Kevil  
J. W. Morgan, BJC/Kevil  
T. J. Wheeler, BJC/Kevil  
P. W. Willison, BJC/Oak Ridge

Received  
9/20/01

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CERTIFICATION

Document Identification: **Action Memorandum for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-1965&D2)**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

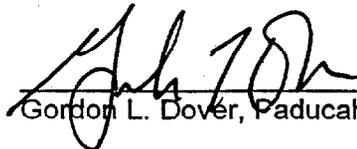
U.S. Department of Energy (DOE)  
Owner and Operator

  
\_\_\_\_\_  
W. Don Seaborg, Paducah Site Manager

9/20/01  
\_\_\_\_\_  
Date Signed

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Bechtel Jacobs Company LLC  
Co-Operator

  
\_\_\_\_\_  
Gordon L. Dover, Paducah Manager of Projects

9/20/01  
\_\_\_\_\_  
Date Signed

I-01713-0027





## U.S. Department of Energy Office of Environmental Management

### *Action Memorandum for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-1965&D2)*

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September 2001

#### **PURPOSE**

This action memorandum documents approval of the non-time-critical removal action recommended in the *Engineering Evaluation/Cost Analysis for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1880&D2/R1).

#### **SITE DESCRIPTION AND CONTAMINANTS**

The Paducah Gaseous Diffusion Plant (PGDP) is an operating U.S. Department of Energy (DOE) facility located in western Kentucky. The plant was operated by Union Carbide Corporation until 1984, when Martin Marietta Energy Systems, Inc. (which later became Lockheed Martin Energy Systems, Inc.), was contracted to operate the plant for DOE. In July 1993, the United States Enrichment Corporation, which was established by the U.S. Congress, leased uranium enrichment production facilities from DOE and became responsible for production of enriched uranium. DOE maintains ownership of the plant and is responsible for environmental restoration and waste management activities. Since 1998, these activities have been managed by Bechtel Jacobs Company LLC under a management and integration contract with DOE.

Between 1974 and 1983, contaminated equipment was removed from the process buildings at the PGDP as a part of numerous uranium enrichment process (cascade) upgrade programs. These programs included the dismantlement, removal, and on-site storage of contaminated equipment, cell components, and scrap metal from the cascade facilities. Much of the scrap material from this program is contained in several scrap yards located on the northwestern portion of the fenced area of the plant, most of which are located adjacent to each other.

The metal surfaces of much of the PGDP scrap inventory were primarily contaminated with compounds derived from uranium hexafluoride feedstock. In addition to the uranium, trace amounts of technetium, neptunium, and plutonium were detected on enrichment equipment removed from process buildings in the 1970s and 1980s. PGDP site investigations, conducted in 1991 and 1992, documented contamination in the vicinity of the scrap yards. A Public Health and Ecological Assessment (PHEA), conducted in conjunction with the 1992 investigation, concluded that the scrap yards might contribute to off-site migration of uranium. In addition, the PHEA concluded that off-site migration of uranium may be significant and that exposures in the vicinity of the scrap yards might pose risks to human health. To reduce the potential for uranium-contaminated silt and sediment migration from the scrap yards, an interim action was performed in 1993 to install silt barriers. Since 1993, the silt barriers have been replaced and repaired, and two silt traps were installed during the summer of 2000. Inspections of the scrap yards conducted in May 2000 and October 2000, and that included limited radiological scanning of scrap material, confirmed that components stored in the scrap yards are radiologically contaminated.

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Based on the PHEA, process knowledge, and the recent site inspections, all scrap yards appear to contain contaminated material. Although the presence of such materials has not been confirmed, the scrap yards may also contain industrial waste, Resource Conservation and Recovery Act (RCRA) waste, Toxic Substances Control Act (TSCA) waste (e.g., such as polychlorinated biphenyls [PCBs]), and asbestos waste.

## **THREATS TO PUBLIC HEALTH AND THE ENVIRONMENT**

The potential exposure to on-site workers and the threatened releases of contaminants from the site, if not addressed by implementing the recommended non-time-critical removal action, may present an imminent and substantial endangerment to public health or the environment. The proposed action will reduce health and environmental risks associated with the potential off-site migration of uranium from deteriorating scrap. In addition, it will reduce the potential risk to on-site workers from direct exposure to contaminants in the vicinity of the northwest corner of PGDP. The proposed removal action also will further the planned investigation and potential remediation of underlying areas that may be contributing to groundwater contamination.

## **REMOVAL ACTION OBJECTIVES**

The RAOs that have been established for the removal action are as follows:

- Reduce or remove potential risk and hazards posed to PGDP personnel from exposure to materials at or potentially migrating from deteriorating scrap materials.
- Reduce or remove potential risks and hazards posed to off-site individuals, including residents, recreational users, and workers, from exposure to contaminants potentially migrating from deteriorating scrap materials.
- Reduce or remove the potential risks to the environment associated with potential exposures to contaminants potentially migrating from deteriorating scrap materials.
- Facilitate the investigation and potential remediation of the underlying soils and burial grounds that are potentially contributing risks to on-site workers and off-site individuals.
- Contain runoff from the 50.5-acre watershed (which includes the scrap yards and Solid Waste Management Units 5 and 6) in a storm water collection basin.
- Control discharges of sediment above 30-ppm (based on a 30-day average) and 60-ppm peak from up to and including a 10-year, 24-hour storm event.
- Control sediment transport in the immediate vicinity of work areas during removal action.
- Provide temporary or vegetative covers for areas where non-vegetative soils are exposed, as soon as practicable.
- Develop design of a containment system compatible with treatment of dissolved phase constituents of concern.

- Monitor<sup>1</sup> discharges for Warm Water Aquatic Habitat Criteria, settleable solids and toxicity to aquatic receptors, for evaluation of subsequent response<sup>2</sup>.
- Design sedimentation controls to prevent migration of contaminants to the groundwater.

## PROPOSED ACTIVITIES

The following activities are included in the removal action:

- Construct staging areas provided with water, septic systems, electricity and communications to enable the removal action to occur.
- Control surface water and sediment runoff by constructing a storm water collection basin and gabion structures, and utilizing local silt fencing, and silt traps. The storm water collection basin will have a 30-year life expectancy and be designed to contain a 10-year, 24-hour storm event. The storm water collection basin will be maintained for as long as necessary to support ongoing active site remediation.
- Remove all of the scrap materials down to the level of surface soil.
- Remove visible materials (e.g. green salt, rust, metal pieces partially embedded in the soil) at the soil level.
- Grade and cover each scrap yard to enable compliant site drainage after completion of the removal action. This cover will also provide for adequate coverage of the underlying burial grounds until such time as remedial investigation can occur.
- Characterize and process scrap materials to meet RCRA, TSCA, appropriate disposal facility waste acceptance criteria, and U.S. Department of Transportation shipping requirements.
- Package and manage any identified regulated material in accordance with applicable or relevant and appropriate requirements (ARARs).
- Transport and dispose of the materials removed.<sup>3</sup>

## STATUTORY AND REGULATORY AUTHORITY

This action satisfies all Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) evaluation criteria. In accordance with the National Contingency Plan, on-site removal

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<sup>1</sup> Monitoring would be performed consistent with the existing KPDES permit and would occur under an Operations, Maintenance and Monitoring Plan which would be appended to the Scrap Metal Removal Action Work Plan.

<sup>2</sup> The EE/CA addresses sediment control measures to mitigate suspended solids. A separate CERCLA decision process would be initiated, if necessary, at a future date to address any dissolved phase contamination issues in storm water runoff from the scrap yard areas as well as other portions of the PGDP site. Any subsequent response could be an early response for this watershed and could be independent from the Site-Wide Sediment Control Response Action.

<sup>3</sup> A risk evaluation of placement of certain CERCLA derived wastes in the C-746-U Landfill located at the PGDP is being conducted independently of this action. This evaluation will be submitted to EPA and the Commonwealth. The risk evaluation will be used to develop criteria for disposal of CERCLA derived wastes in the C-746-U Landfill. These criteria will be considered in making disposition decisions regarding waste generated under this Action Memorandum.

actions conducted under CERCLA are required to meet ARARs to the extent practicable. The primary ARARs include RCRA and TSCA regulations in the event that such wastes are encountered during the remedial process. It is the intent of DOE to meet all ARARs, as set forth in the EE/CA, when conducting this removal action.

#### PUBLIC PARTICIPATION

A public comment period for Engineering Evaluation/Cost Analysis for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-1880&D2) began on April 6, 2001, and ended on May 21, 2001. DOE, the Kentucky Division of Waste Management (KDWM), and the United States Environmental Protection Agency (EPA) reviewed the comments received, and DOE prepared written responses to the significant comments. In accordance with 40 CFR 300.415(n)(4)(iv) and 40 CFR 300.820(a), these written responses to significant comments have been included in the administrative record. Additionally, all the public comments received are maintained in the administrative record.

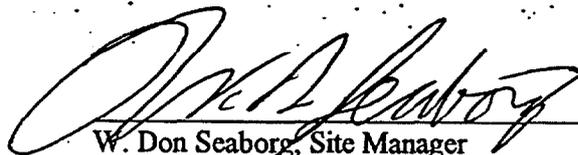
#### RECOMMENDATION

This non-time-critical removal action is being implemented under the PGDP Federal Facility Agreement. In accordance with DOE authority under Executive Order 12580, DOE is assuming responsibility as lead agency to fund and perform this non-time-critical removal action. Both the U.S. EPA, and the KDWM have approved the EE/CA for this removal action. Based on the analysis presented in the EE/CA, the recommended action is appropriate and will be implemented in accordance with CERCLA requirements.

This action memorandum incorporates the following attachment:

Attachment: *Engineering Evaluation/Cost Analysis for Scrap Metal Disposition at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-1880&D2/R1)*

Approval



W. Don Seaborg, Site Manager  
Paducah Site Office  
U. S. Department of Energy

9/20/01  
Date