

APPENDIX
STAKEHOLDER INPUT

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STAKEHOLDER INPUT

This appendix delineates the efforts made to solicit stakeholder input during the development of the 2005 End State Vision Annual Update for PGDP. The various events and efforts DOE has undertaken through June 2, 2005, are presented, along with viewgraphs, handouts, and other materials from the various meetings and workshops that have taken place.

- On January 15, 2004, the DOE Site-Specific Advisory Board for the Paducah Gaseous Diffusion Plant, known as the Paducah Citizens Advisory Board (CAB), was briefed on the RBES background, purpose, and process. The Announcements page of the DOE Environmental Information Center Web site (http://www.bechteljacobs.com/pad_eic_announce.shtml) and a community bulletin board carried on the Paducah-area cable network advertises CAB meetings. The briefing was part of the scheduled monthly meeting of the CAB. Several members of the general public attended the CAB meeting. The briefing package is included as Attachment 1 of this appendix.
- On January 31, 2004, the Draft (D0/R2) Paducah RBES document was completed and forwarded to DOE Headquarters.
- On February 2, 2004, the Draft (D0/R2) RBES document was placed in the McCracken County Public Library and in the DOE Environmental Information Center (EIC). On February 3, 2004, the document was posted on the EIC public Web site. Notice of the availability of the D0/R2 RBES document for review and comment was mailed to approximately 2,500 stakeholders and was posted on the EIC public Web site. Display advertisements (identical to the postcards mailed to the stakeholders) announcing the availability of the RBES document appeared in the *Paducah Sun* on February 1 and February 4. The notice of availability also included notice of a February 5 public meeting. The postcard/advertisement is included in Attachment 2 of this appendix.
- On February 5, 2004, a public meeting to explain the RBES process and to encourage input was held at the West Kentucky Community and Technical College in Paducah. This meeting was attended by the Paducah Portsmouth Program (PPPO) Office Manager and Chief Operating Officer (COO) on behalf of DOE. In addition to newspaper ads, a Web announcement, and postcard mailing announcing the meeting, key stakeholders were telephoned to assure they were aware of the meeting. Twenty-eight stakeholders, representing local government, the Kentucky Congressional delegation, a regional environmental organization, the CAB, state regulators, area businesses, and other entities attended. Near the conclusion of this meeting, the designated DOE contact for comments and questions was identified and a February 26, 2004, stakeholder workshop was announced. The presentation shown at this meeting and the handout materials excerpted from the D0/R2 RBES document also are included in Attachment 2 of this appendix. These handouts also were made available at later stakeholder workshops and were provided to all members of the CAB.
- On February 9, 2004, John Tanner, the chair of the CAB, began a series of presentations on the RBES to community groups. The groups receiving presentations included the Citizens for Truth (ACT) (February 9, 2004), the Paducah Area Community Reuse Organization (PACRO) (February 18, 2004), the Ballard County Chamber of Commerce (February 19, 2004), Paper, Allied-Industrial, Chemical, and Energy Workers International Union, Local 5-650 (PACE) (March 2, 2004), and the Community and Business Development Committee of the Paducah Chamber of Commerce (March 9, 2004). Following these presentations, the CAB received letters of support from PACRO and ACT. The presentation used on March 9, 2004, and the letters received by the CAB are in Attachment 3 to this appendix.

- On February 16, 2004, April 1, 2004, and April 22, 2004, articles on the RBES process appeared in the *Paducah Sun*. The February 16, 2004, article told readers how to find the document, pointed out that DOE was accepting comments, and included the date, time, and location of the February 26 workshop. Stakeholder comments quoted in this article have been treated as comments to DOE on the RBES. The April 1, 2004, article reviewed the contents of the D1 RBES report and provided parts of a 2005 End State Vision Annual Update for PGDP, developed by the Paducah Area Community Reuse Organization (PACRO). The April 22, 2004, article discussed future use of the PGDP site and presented PACRO's proposed process for plant transition. These articles are included as Attachment 4 to this appendix.
- On February 19, 2004, the status of the RBES document was a significant topic of discussion at the monthly meeting of the CAB. This meeting was attended by the PPPO COO on behalf of DOE. Again, several members of the general public were in attendance, and interested stakeholders were encouraged to participate in the scheduled February 26 workshop. There was no prepared RBES presentation at this meeting.
- On February 26, 2004, the first of two stakeholder workshops was held at the EIC in Paducah, Kentucky. This meeting was attended by the PPPO COO on behalf of DOE. The workshop was announced on the EIC public Web site and in an advertisement that appeared in the *Paducah Sun* February 22 through 24, 2004. Key stakeholders who had not attended the February 5 public meeting also were notified by telephone. Sixteen stakeholders participated in this workshop. Materials summarizing comments received prior to the workshop and materials explaining various hazard areas were prepared and projected to support discussion. These materials are included in Attachment 5 of this appendix.
- On March 1, 2004, the PPPO COO participated in a Paducah-based radio call-in program about the RBES effort. A local environmental activist, formerly Chair of the CAB, also participated in the one-hour program. The discussion covered the purpose, general approach, and some of the specific content of the D0/R2 RBES document. Two members of the public called in questions. During the program, the second stakeholder workshop was announced. The radio station, WKYX AM, reaired the program on March 17, 2004.
- An announcement of the second (March 11) workshop was placed on the EIC public Web site, and an advertisement announcing the March 11 workshop appeared in the *Paducah Sun* March 7 through March 9. Again, key stakeholders who might not be aware of the second workshop were contacted by telephone. A copy of the ad announcing this workshop is included in Attachment 6 of this appendix.
- On March 9, 2004, a teleconference with DOE Headquarters was held to discuss comments on the D0/R2 RBES report. The PPPO was represented by the COO during this conference call.
- On March 11, 2004, the second stakeholder workshop was held at the EIC. DOE Headquarters' comments on the draft document, stakeholder comments received since the February 26 workshop, and anticipated changes for the final document were discussed with seven participating stakeholders. Information projected to support discussion at this workshop also is included in Attachment 6 of this appendix.
- On March 18, 2004, the status of the revised (D2) RBES document was discussed during the monthly CAB meeting at the EIC. This meeting was attended by the PPPO Manager and COO on behalf of DOE. The CAB presented to DOE their vision of an end-state for PGDP. This material is included in Attachment 7 of this appendix.
- On April 15, 2004, DOE notified the CAB of the extended public participation period and a new September 1, 2004, deadline for the final RBES report.

- On April 30, 2004, the CAB Waste Task Force sent questions regarding the RBES to DOE. These questions and the responses prepared by DOE are presented in Attachment 8 of this appendix.
- On April 30, 2004, the D2R2 RBES document was posted on the EIC public web site. The document was placed in the EIC and the McCracken County Public Library on the same day.
- On May 11, 2004, a presentation concerning the RBES was made by PPPO Office Manager to the Paducah Chamber of Commerce. This materials used in this presentation are included in Attachment 9 of this appendix.
- On June 1, 2004, DOE sent letters to several community groups offering presentations on the RBES. Appendix 10 of this appendix presents the addressees of the June 1 letter and a copy of the letter. Subsequently, presentations were made to the Paducah Board of Realtors (June 18, 2004) and Greater Paducah Economic Development Council and Paducah Chamber of Commerce (July 15, 2004). The June 18 presentation did not use prepared materials; however, the presentation materials used at the July 15 presentation are included in Attachment 10 of this appendix.
- An announcement of the third (June 3) workshop was placed on the EIC public Web site, and an advertisement announcing the June 3 workshop appeared in the *Paducah Sun* April 30 through May 2, 2004. Key stakeholders were contacted by telephone. A copy of the ad announcing this workshop is included in Attachment 11 of this appendix.
- On June 3, 2004, the third stakeholder workshop was held at the EIC. DOE Headquarters' comments on the draft document, stakeholder comments received since the arch 11 workshop, and anticipated changes for the final document were discussed. Information projected to support discussion at this workshop is included in Attachment 11 of this appendix.
- On June 17, 2004, the status of the revised RBES document was discussed during the monthly CAB meeting at the EIC. This meeting was attended by the PPO Office Manager on behalf of DOE. The material handed-out at the meeting is included in Attachment 12 of this appendix.
- On July 15, 2004, John Russell, a member of the CAB Waste Operations Task Force, presented an overview of the burial grounds at the PGDP and their current planned and risk-based end state to the CAB at the monthly CAB meeting. The presentation used is included in Attachment 13 of this appendix.
- In summer 2004, DOE determined that the development of the final RBES documents would be delayed until after a workshop to be held in October 2004. The notes from this workshop appear in Attachment 14. In response to these notes, the title of the document was changed to *2005 End State Vision Annual Update for PGDP* and a D2R3 revision of the document was prepared.
- All public and stakeholder comments received in writing are provided in Attachment 15 of this appendix. These include comments from the public, regulatory agencies, public groups, and DOE HQs.
- Summary tables of the public and stakeholder comments are included as Attachment 16.
- The D2R3 2005 End State Vision Annual Update for PGDP was released in June 2005. A summary of changes to the document since production of the DO/R2 revision are included as Attachment 17.
- A copy of the stakeholder update presentation dated October 18, 2005, summarizing the status of the End State Vision Process for PGDP is included as Attachment 18.

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Attachment 1

JANUARY 15, 2004, CAB MEETING BRIEFING PACKAGE

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Risk-Based End States

Presentation to the
PGDP Citizens Advisory Board

January 15, 2004



Background

- Underlying fundamental principle of CERCLA and RCRA is to implement cleanup actions protective of human health and the environment.
- DOE conducted a Top-to-Bottom Review of DOE cleanup plans nationwide in 2002 to ensure risk-based approaches were being implemented consistent with the intent of CERCLA and RCRA:
 - Mitigate immediate risks
 - Focus resources on areas providing the greatest risk-reduction
 - Cleanup solutions consider both current and future land use
- Top-to-Bottom Review concluded that many DOE sites were not maximizing risk-based approaches into their cleanup plans.
- In response to these findings, DOE-HQ required each site to develop a Risk-Based End State Strategy (RBES) Document.



Risk Based End States Strategy Document

What is a risk-based end state?

- An end state that is based on the appropriate planned future land use and is protective of human health and the environment for that land use.
- Should be sustainable and based on the exposure scenarios consistent with the future land use of both the site and areas that bound the site.
- Should describe any hazards remaining and their projected levels, potential receptors and pathways, and their barriers.
- Timeframe is the current DOE Environmental Management (EM) mission completion date.

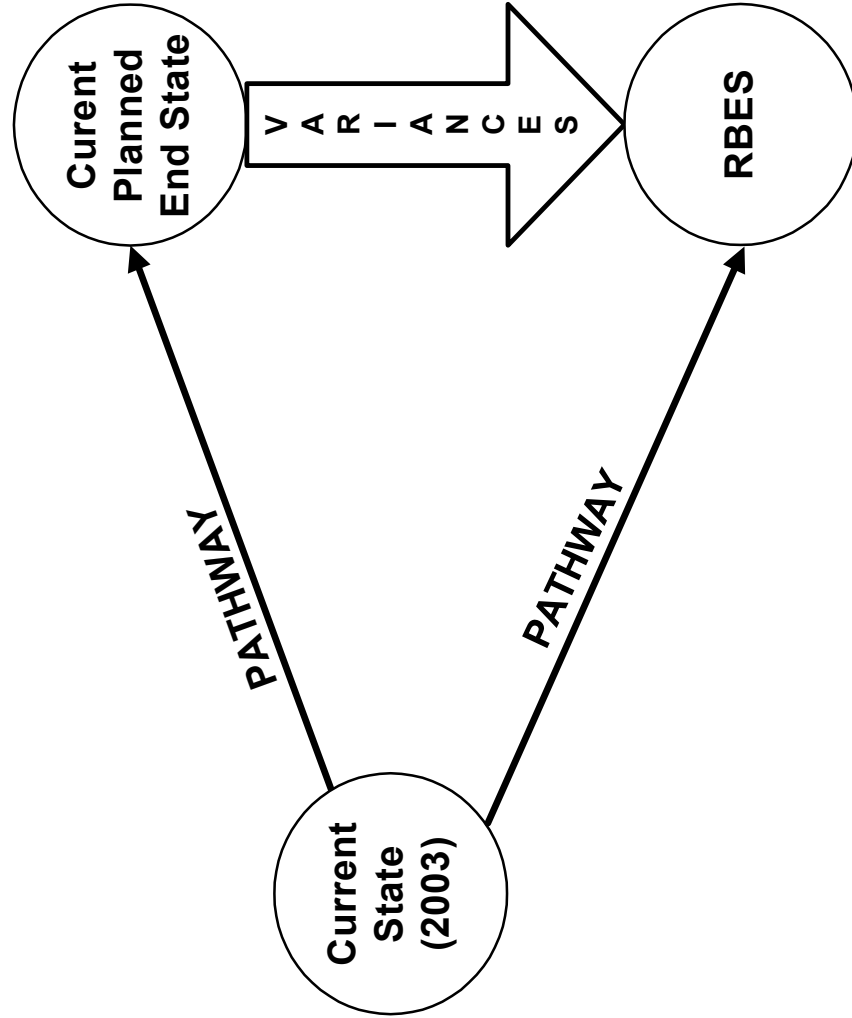
Whose input helps define the risk-based end state?

- Department of Energy
- Regulators and Stakeholders (e.g., surrounding community, interested citizens, affected industries)
- Affected governments



Risk Based End States Strategy Document

CONCEPTUAL RBES ANALYSIS



January 15, 2004



Risk Based End States Strategy Document

Key points associated with the RBES Document:

- Contains planning assumptions and does not reflect a decision.
- Consistent with the intent of applicable laws, regulations and published EPA guidance
- If there is a difference between the RBES and current cleanup plans, DOE will change its current planned course of action, only under the following conditions:
 - Value of improvement in protection of human health and environment
 - Benefit to the taxpayer
- Any proposed changes to the current cleanup plans that could result from the RBES process would be made in accordance with all applicable requirements and procedures.



Risk Based End States Strategy Document

Status of the Paducah RBES Document:

- Discussions have been initiated with the Regulators to obtain input
- Public meeting planned
- Draft RBES Document due to DOE-HQ by February 1, 2004
- Efforts to obtain Stakeholder input will continue during DOE-HQ review
- Final RBES tentatively scheduled for completion in March of 2004

January 15, 2004

Attachment 2

FEBRUARY 5, 2004, PUBLIC MEETING MATERIALS

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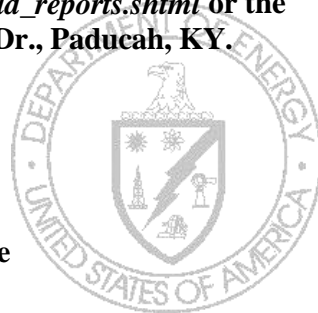
U.S. Department of Energy PUBLIC MEETING

DOE will hold a public meeting Thursday, February 5, 2004 at 7:00 p.m. to discuss the draft Risk-Based End State Vision document for the Paducah Gaseous Diffusion Plant. The document is a planning tool to assure environmental cleanup efforts are consistent with the site's future use planning. The Department is seeking public input during the review period.

The draft is available at www.bechteljacobs.com/pad_reports.shtml or the Environmental Information Center, 115 Memorial Dr., Paducah, KY.

For more information, call (270) 441-5023.

**7:00 p.m. - Thursday, February 5, 2004
Crouse Hall, Room 101
West Kentucky Community and Technical College
4810 Alben Barkley Drive, Paducah, KY**



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Paducah Gaseous Diffusion Plant

Risk-Based End State Vision

*Public Meeting
February 5, 2004*





Purpose of the Meeting

- Get stakeholders involved in the Risk-Based End State (RBES) process
- Explain the RBES initiative
- Plan future opportunities for stakeholder participation



A DOE Initiative

- In 2002, DOE's Office of Environmental Management (EM) conducted an independent Top-to-Bottom Review of DOE cleanup projects across the country
- Based on the Top-to-Bottom Review, EM required each DOE site to develop a Risk-Based End State Vision document
 - EM issued guidance establishing the requirements for the RBES document
 - Guidance documents are available at www.em.doe.gov/office.html (Select Hot Topics, then select Risk-Based End State Cleanup Project)
 - Internet access available at the DOE Environmental Information Center, 115 Memorial Drive, Paducah, KY, (270) 554-6979



Key Points About the Draft RBES Document

- It is a draft
- Stakeholders have input
- It is not a decision document
- It is an analytical tool



What is a *Risk-Based End State*?

- The condition of the property after cleanup...
- That would be protective of human health and the environment...
- Taking into account reasonably foreseeable future use of the property (i.e., industrial, recreational, residential)...
- And potential contaminants and hazards



Why define a Risk-Based End State?

- Ensure today's cleanup actions are protective for tomorrow's foreseeable future uses of the site
- Start with the end in mind - know your destination



Development of the Draft RBES Document

- Identified reasonably foreseeable future land use
- Identified acceptable risk levels for people and the environment consistent with future use
- Identified where current cleanup plans are going
- Identified variances between the Risk-Based End State and the Current Planned End State



What about the variances?

- After final RBES document submitted to EM in DOE Headquarters, DOE will ...
 - Review the variances - nationally and locally
 - Consider whether to pursue potential changes to current cleanup plans
 - There may be no changes



What if DOE decides to pursue changes?

- Any proposed changes to current cleanup plans would have to be made in accordance with all applicable requirements and procedures, including public participation and regulatory approval.



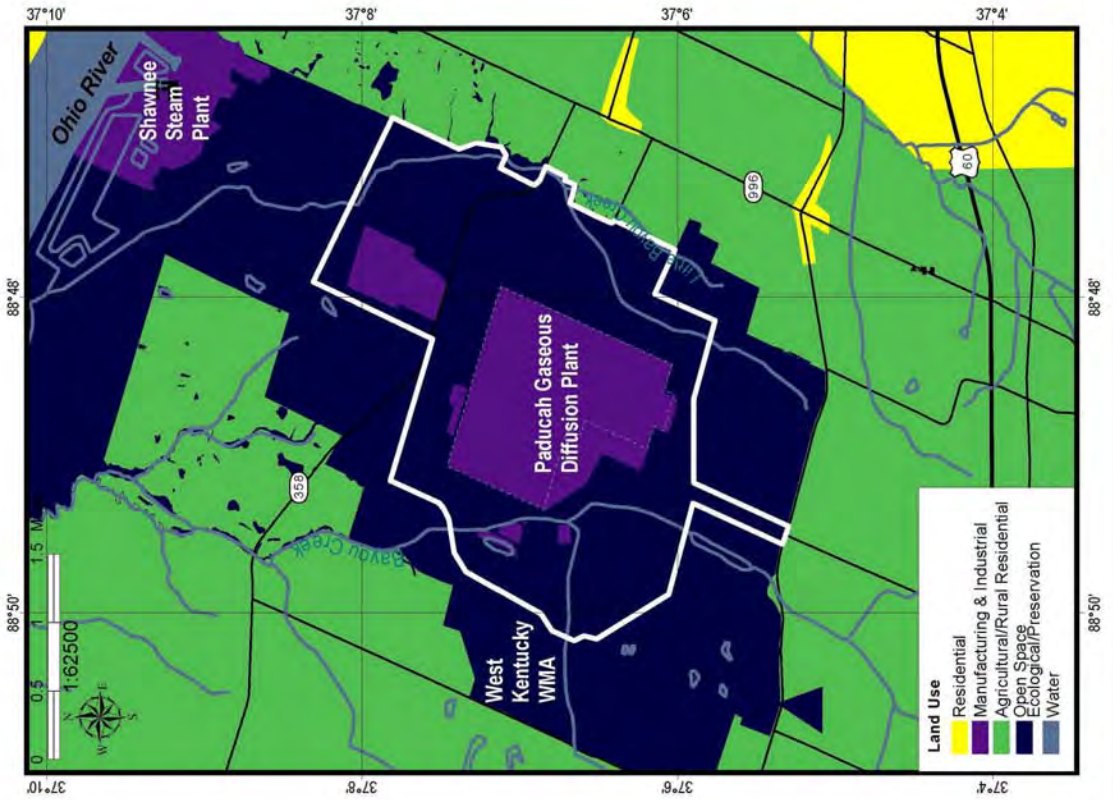
Reasonably Foreseeable Future Land Use

- The reasonably foreseeable land use identified in the RBES document is the same as current land use
- Based on currently approved Site Management Plan under the Federal Facility Agreement
 - Industrial land use for areas currently viewed as industrial
 - Recreational land use for the rest of the DOE property



Reasonably Foreseeable Future Land Use

(Same as current land use)





Examples of Variances Between End States

- Cleanup levels for soils and sediment in industrial areas
 - Current Planned End State (CPES): Residential Use, including access controls, with maximum risk at one in a million and PCB cleanup level of 1 part per million (ppm)
 - RBES: Industrial Use, including access controls, with risk in the EPA acceptable risk range (one in ten thousand to one in one million) and PCB cleanup level of 25 ppm



Examples of Variances Between End States

- Groundwater Institutional Controls
 - CPES: Maintain current water policy, using renewable leases, until contaminant levels reach drinking water standards (hundreds to thousands of years)
 - RBES : Enhanced institutional controls to sustainably restrict access to groundwater until contaminant levels reach drinking water standards (hundreds to thousands of years)



Examples of Variances Between End States

- Potential sources of groundwater contamination
 - CPES: Monitored natural attenuation to drinking water standards (at least hundreds of years) with current water policy and active source reduction for solvents (TCE)
 - RBES: Monitored natural attenuation to drinking water standards (potentially thousands of years) in conjunction with enhanced institutional controls



Key Points

- This is a draft
- We want stakeholder input
- This is not a decision document
- DOE may or may not pursue changes

Any proposed changes to current cleanup plans would have to be made in accordance with all applicable requirements and procedures, including public participation and regulatory approval.



How to Find the Draft RBES Document

The Draft RBES Document is available

- on the internet at
www.bechteljacobs.com/pad_reports.shtml
- or -
- at the DOE Environmental Information Center
115 Memorial Drive
Paducah, KY 42001
(270) 554-3004
M-F 9 a.m. to 5 p.m.



Schedule

- You are encouraged to begin submitting comments
- DOE has scheduled an RBES Workshop to address comments and assist with input:
 - 7:00 p.m., Thursday, February 26, 2004
 - DOE Environmental Information Center
 - 115 Memorial Drive, Paducah, KY
- Comments received by February 20 can be addressed in the February 26 Workshop.
- Stakeholders can continue to submit comments after the workshop, but please keep in mind that the final document is due to DOE Headquarters by March 30, 2004.
- Your comments are always welcome.



Direct Comments and Questions to:

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Paducah Operations Oversight Group
U.S. Department of Energy
P.O. Box 1410
Paducah, KY 42002

E-mail: dollinsdw@oro.doe.gov

Phone: (270) 441-6819

Fax: (270) 441-6801

DRAFT

**Risk-Based End State
Vision and Variance Report for the
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky**



This document is approved for public release per review by:

Paul Miller 2-2-04

BJC Classification & Information Office Date

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DRAFT

Risk-Based End State Vision and Variance Report
for the Paducah Gaseous Diffusion Plant,
Paducah, Kentucky

Date Issued—January 2004

Prepared for the
U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Environmental Management Activities at the
Paducah Gaseous Diffusion Plant
Paducah, Kentucky 42001

managed by
Bechtel Jacobs Company LLC

for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-03OR22980

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PREFACE

This *Draft Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2119&D0R2, was prepared to meet requirements set forth in a memorandum from Jessie Roberson to Distribution (including William E. Murphie) dated September 22, 2003, as amended by clarification contained in a memorandum entitled “Risk Based End State Guidance Clarification” dated December 23, 2003. The presentation of material in this document is consistent with U.S. Department of Energy (DOE) Policy, DOE P 455.1, entitled *Use of Risk-Based End States* and the standardized approach set forth in a guidance document entitled *Guidance for Developing a Site-Specific End State Vision* (dated September 11, 2003), as amended by the “Risk Based End State Guidance Clarification.” When finalized, this document will be used as the primary tool for communicating the Paducah Gaseous Diffusion Plant’s (PGDP’s) risk-based end state vision to the involved parties (i.e., DOE, the Environmental Protection Agency, the Commonwealth of Kentucky, and the general public). This report will be modified and resubmitted after receipt and resolution of comments from DOE headquarters and other stakeholders.

Although this report presents potential actions to address hazards that could be used to reach the PGDP’s risk-based end state, this report is not a decision document. Rather, discussions of potential specific mechanisms are included to provide an analytical frame-work that DOE will use to further evaluate the cleanup activities and the strategic approaches at PGDP to determine if it is appropriate to pursue changes in the PGDP baseline. Any decision to pursue changes to the baseline will include factors beyond those presented in the risk-based end state report, including input from involved parties. If DOE ultimately decides to seek changes to the current compliance agreements, decisions, or statutory/regulatory requirements, then those changes will be made in accordance with applicable requirements and procedures.

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EXECUTIVE SUMMARY

In 2002, the Department of Energy's (DOE's) Office of Environmental Management (EM) established a set of corporate projects to lead EM's response to the *Top to Bottom Review*. One of these projects has resulted in the production of policy and guidance that directs DOE sites to submit a site-specific Risk-based End State (RBES) vision document. In accordance with that policy (DOE Policy 455.1, *Use of Risk-based End States*) and its implementing guidance (*Guidance for Developing a Site-specific Risk-based End State Vision*), as amended, the Paducah Gaseous Diffusion Plant (PGDP) has prepared this draft RBES vision and variance report for PGDP.

This draft report uses a standardized approach to meet the objectives for the RBES report contained in the guidance. This approach relies on the presentation of a series of maps and conceptual site models (CSMs) that depict the relationship between PGDP and its surroundings. The maps and CSMs are intended to present and allow comparisons between current and future land uses; depict hazards and risks to affected or potentially affected populations or receptors; serve as a planning tool for site management; facilitate communication of risks during discussions with stakeholders; allow tracking of expected and actual cleanup results; and serve as a communication tool for public meetings in regard to cleanup activities, current PGDP missions and requirements, and future land use. The maps follow a standardized hierarchical approach that depicts the PGDP RBES in regional-, site-, and hazard-specific contexts. The CSMs are produced only in a hazard-specific context. In the CSMs and their associated text, various responses to achieve site cleanup are presented. These presentations are not meant to be pre-decisional, but are meant to introduce examples of actions that may be completed to reach the RBES. The selection of specific actions will be made in accordance with applicable law and agreements.

Note that stakeholders have not had an opportunity to provide input to this draft RBES report, including the variances identified. Once stakeholder input is received, this draft RBES report and the variance summary it contains will be modified as appropriate.

Additionally, this draft report presents potential actions to address hazards that could be used to reach the RBES. These presentations are not meant to be pre-decisional but are meant to introduce examples of actions that may be completed to reach the RBES. The selection of specific actions will be made in accordance with applicable law and agreements.

Once the final RBES vision is developed, DOE will further evaluate the cleanup activities and the strategic approaches at PGDP to determine if it is appropriate to pursue changes in the PGDP baseline. Any decision to pursue changes to the baseline will include factors beyond those presented in the RBES report, including input from involved parties. If DOE ultimately decides to seek changes to current compliance agreements, decisions, or statutory/regulatory requirements, then those changes will be made in accordance with applicable requirements and procedures.

Currently, PGDP, located in Paducah, Kentucky, is the nation's only operating uranium enrichment facility. Missions performed at PGDP are the enrichment mission, a uranium conversion mission, and an environmental cleanup mission. The enrichment mission began in the early 1950s and involves producing enriched uranium for commercial uses through a gaseous diffusion process. At present, the facilities and infrastructure used to produce enriched uranium are leased to the United States Enrichment Corporation (USEC). The uranium conversion mission, which was recently initiated, involves the construction and operation of a facility that will convert depleted uranium hexafluoride (DUF₆) currently stored at PGDP less reactive uranium forms and the subsequent disposal of the converted uranium. Finally, the environmental cleanup mission involves work performed under a Federal Facility Agreement (FFA), as well as some work outside of the FFA. The current portion of the cleanup mission under the FFA is to investigate and address existing environmental contamination and to D&D those facilities currently leased to USEC once the GDP

ceases operation. The portion of the cleanup mission not included in the FFA includes the characterization and appropriate disposal of legacy waste and materials found in DOE Material Storage Areas (DMSAs) and continuation of waste management activities.

Consistent with the RBES guidance and the missions at PGDP, the following nine hazard areas were identified at PGDP:

- Hazard Area 1 – Groundwater Operable Unit (GWOU): This hazard area encompasses both the sources of contamination to groundwater and the three dissolved phase plumes that originate within the industrialized area of PGDP and extend off-site.
- Hazard Area 2 – Surface Water Operable Unit (SWOU): This hazard area encompasses the sources of surface water contamination found within the industrialized portion of PGDP, including plant ditches, and two creeks, Bayou and Little Bayou Creek, located outside of the industrialized portion of PGDP, which run both on and off DOE property.
- Hazard Area 3 – Burial Grounds Operable Unit (BGOU) (Group 1). This hazard area includes three burial grounds that contain buried waste and/or soil that are not believed to serve as a source of groundwater contamination but for which the current planned end state and RBES differ.
- Hazard Area 4 – Surface Soils Operable Unit (SSOU). This hazard area encompasses all areas containing contaminated soils that do not impact the GWOU or SWOU and that are not part of other hazard areas.
- Hazard Area 5 – Permitted Landfills. This hazard area includes two permitted, closed landfills, the currently operating permitted landfill, and, under future conditions, a potential “CERCLA Cell” that would be used to dispose of debris and other materials generated during GDP D&D.
- Hazard Area 6 - BGOU (Group 2). This hazard area includes of four areas that contain buried waste and/or soil that are not believed to serve as a source of groundwater contamination but for which the current planned end state and RBES do not differ.
- Hazard Area 7 - Legacy Waste and DMSAs. This hazard area encompasses legacy waste found at storage locations at PGDP and potentially contaminated debris, surfaces, and soil found in DOE Material Storage Areas (DMSAs) located throughout PGDP.
- Hazard Area 8 – Cylinder Yards and DUF₆ Conversion Facility. This hazard area is composed of the cylinder yards that contain DUF₆ in cylinders and the conversion facility currently under construction.
- Hazard Area 9 – GDP Facilities. This hazard area is composed of the GDP facilities and infrastructure that will undergo decommissioning and decontamination (D&D) once the current uranium enrichment mission is ended. This hazard area also includes any sources to the GWOU and SWOU not addressed in the other hazard areas.

Each of these hazard areas, except for the portions of the dissolved phase groundwater plumes and Bayou and Little Bayou Creek located off DOE property, is in locations where current and future expected land uses are industrial or recreational. Some areas overlying the groundwater plumes or adjacent to the creeks are rural residential.

Under current conditions, risks at all hazard areas are at or below levels of risk that fall near the bottom of EPA’s acceptable risk range for site-related exposures (E-06). This level of risk, which is called

a *de minimis* level of risk in this report, is attained under current conditions through access and institutional controls. However, unmitigated risks or risks that potentially could exist in the absence of these controls exceed the upper end of EPA's acceptable risk range for site-related exposures (E-04) at some locations. These risks are driven by the presence of chlorinated solvents (primarily trichloroethene [TCE] and its breakdown products) in groundwater and by the presence of polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), metals, and radionuclides (primarily the uranium isotopes) in soil and sediment.

Under the RBES, risk at all hazard areas will be at *de minimis* levels. These levels will be attained through the following actions:

- Continued access and institutional controls (e.g., capping, controls on groundwater use);
- Monitored natural attenuation of sources of groundwater contamination (TCE source areas) and the dissolved phase plumes with continued access and institutional controls;
- Excavation and on and off site disposal of contaminated surface soil and sediment to attain a target risk of 1E-04 to receptors consistent with current and future land use and an average PCB concentrations within exposure units of 25 ppm in industrial areas and 1 ppm in recreational areas;
- Characterization and off site disposal of legacy waste; and
- On- and off-site disposal of debris from D&D of facilities and infrastructure.

In order to identify variances between the RBES and the current PGDP baseline, a current planned end state also is presented for each of the hazard areas. Under the current planned end state, risk at all hazard areas also will be at *de minimis* levels. These levels will be attained through the following actions:

- Continued access and institutional controls (e.g., capping, controls on groundwater use);
- Response actions to reduce the concentration of TCE and other solvents in subsurface areas that act as sources of groundwater contamination;
- Response actions to reduce TCE concentrations in the dissolved phase plumes;
- Monitored natural attenuation of sources of groundwater contamination (TCE source areas) and the dissolved phase plumes following completion of response action to reduce TCE concentrations;
- Active measures to reduce TCE concentrations in groundwater discharged to surface water;
- Construction of sediment control basins;
- Excavation and off-site disposal of surface and subsurface soil and sediment to attain a target risk of 1E-06 for hypothetical residents and an average PCB concentration of 1 ppm within exposure units in industrial and recreational areas;
- Excavation and off-site disposal of wastes from burial grounds; and
- On- and off-site disposal of debris from D&D of facilities and infrastructure.

Using this information, the following ten variances were identified (RBES response action listed first):

- 1) Enhanced institutional controls to limit groundwater use versus continuation of PGDP Water Policy to limit groundwater use – affects Hazard Areas 1, 6, and 9;

- 2) Monitored natural attenuation for groundwater source areas, with either enhanced institutional controls or continuation of the PGDP Water Policy, versus active treatment of groundwater source areas using heating technologies, with continuation of the PGDP Water Policy – affects Hazard Areas 1 and 9;
- 3) Monitored natural attenuation for groundwater source areas, with either enhanced institutional controls or continuation of the PGDP Water Policy, versus excavation of groundwater source areas (burial grounds), with continuation of the PGDP Water Policy – affects Hazard Area 1;
- 4) Monitored natural attenuation for the dissolved phase groundwater plumes, with either enhanced institutional controls or continuation of the PGDP Water Policy, versus active treatment for the dissolved phase plume using oxidation technologies, with continuation of the PGDP Water Policy – affects Hazard Area 1.
- 5) Continued monitoring of discharges of groundwater to surface water versus actions to reduce contaminant levels in groundwater discharged to surface water – affects Hazard Area 1;
- 6) Cleanup levels for soil and sediment in industrial areas set at targets of 1E-04 (under an industrial scenario) and PCBs of 25 ppm and cleanup levels for soil and sediment in recreational areas set at targets of 1E-04 (under a recreational scenario) and PCBs of 1 ppm versus cleanup levels for soil and sediment in industrial and recreational areas set at targets of 1E-06 (under a residential scenario) and PCBs of 1 ppm – affects Hazard Areas 2, 4, 8, and 9;
- 7) Continued monitoring of contaminant levels in surface water at outfalls versus construction of sediment control basins to reduce contaminant migration in surface water – affects Hazard Area 2;
- 8) Capping of certain burial grounds versus excavation of certain burial grounds – affects Hazard Area 3;
- 9) Construction of potential CERCLA Cell versus no construction – affects Hazard Area 5; and
- 10) Cleanup levels for soil and/or decontamination of surfaces in industrial areas set at targets of 1E-04 (industrial) and PCBs of 25 ppm versus targets of 1E-06 (residential) and PCBs of 1 ppm – affects Hazard Area 7.

Subsequent to the delineation of the variances between the RBES and the current planned end state, barriers in achieving the RBES and recommendations to address these barriers are discussed. In the discussion, the affected organizations that DOE needs to work with are identified, the affected organizations' views are noted, and a path forward for DOE is presented.

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**Draft Risk-Based End State
Vision and Variance Report for the
Paducah Gaseous Diffusion Plant**

TABLE OF VARIANCES

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Table 5.1 Variance report by hazard area

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
V-1.1	<p>Hazard Area 1: Groundwater Operable Unit</p> <p>Current Planned End State: Continuation of PGDP Water Policy</p> <p>RBES: Enhanced institutional controls</p>	<p><u>Scope:</u> The current planned end state includes continuation of the current PGDP Water Policy^d. The RBES includes enhanced institutional controls^b, which would supercede the current PGDP Water Policy. Under both end states, the goal would be to reduce risks to residents from exposure to groundwater to <i>de minimis</i> levels^c.</p> <p><u>Cost:</u> The cost variance has not been determined to date. The current PGDP Water Policy costs range from \$70,000 to \$100,000 per year. Depending upon the specific enhanced institutional controls, the cost variance of the enhanced institutional controls could include some cost avoidance (if the PGDP Water Policy is terminated). However, the implementation of enhanced institutional controls would include costs for acquisition of rights to restrict groundwater use and continued monitoring to ensure continued long-term effectiveness of the enhanced institutional controls.</p> <p><u>Schedule:</u> The PGDP Water Policy is currently in place. Implementation of the enhanced institutional controls would be a future planned CERCLA response action.</p> <p><u>Risk:</u> The expected risk variance is zero under both the PGDP Water Policy and enhanced institutional controls because each would prevent exposure to contaminated groundwater, resulting in no risk. Enhanced institutional controls, however, would be more sustainable and, therefore, would result in greater long-term effectiveness because they would involve legally enforceable property restrictions and deed notices. (The agreements with landowners under the PGDP Water Policy do not restrict groundwater use, but only commit DOE to provide municipal water to replace the groundwater in return for the property owner's commitment not to use the groundwater. Thus, current or future property-owners could return to using groundwater in the home, completing this exposure pathway, and potentially raising risk from <i>de minimis</i> levels^c.)</p>	<p>DOE policy may limit options available under the enhanced institutional controls.</p>	<p>Initiate further discussions with the public and regulators.</p> <p>Revisit DOE policy.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
V-1.2	<p>Current Planned End State: Treatment to attain source reduction</p> <p>RBES: Monitored natural attenuation (with either PGDP Water Policy or enhanced institutional controls; see V-1.1)</p>	<p><u>Scope:</u> The current planned end state assumes implementation of DNAPL source reduction actions using <i>in situ</i> heating technologies in combination with monitored natural attenuation. The RBES does not assume source actions and consists solely of monitored natural attenuation with a point of exposure established at the DOE property boundary or at a downgradient location in accordance with the requirements of CERCLA.</p> <p><u>Cost:</u> The combined cost of implementing <i>in situ</i> heating technology at the DNAPL source areas (i.e., C-400, C-720, and oil landfarm) is estimated to range from \$75,000,000 to \$140,000,000. The cost per year for monitored natural attenuation essentially would be the same under both the current planned end state and RBES; however, the duration of the monitoring/attenuation period could differ between the current planned end state (hundreds of years) and the RBES (potentially thousands of years).</p> <p><u>Schedule:</u> Under the current planned end state, the construction and performance of the source actions would be implemented by 2010, with associated monitoring/attenuation potentially continuing for hundreds of years. A draft proposed plan for the C-400 DNAPL source action is currently scheduled for delivery to the regulatory agencies in January 2004. Under the RBES, no additional construction beyond installation of additional monitoring wells would be required; however, monitoring/attenuation potentially could continue for thousands of years.</p> <p><u>Risk:</u> The only variance in risk between the current planned end state and the RBES is the amount of time necessary to achieve MCLs. The PGDP Water Policy and/or enhanced institutional controls would eliminate risks to the public from off-site migration of DNAPL under both end states. However, the current planned end state could reduce the amount of time necessary to meet MCLs, thereby shortening the time period that the PGDP Water Policy or enhanced institutional controls would have to remain in effect.</p> <p>Implementation of <i>in situ</i> heating technology under the current planned end state could result in exposures of remediation workers to contaminated soil and groundwater and, potentially, gases, as well as physical hazards.</p>	<p>The regulators' position is that monitored natural attenuation would need to be supplemented by source actions to reduce contaminant concentrations to MCLs in a "reasonable" timeframe (e.g., = 100 years); however, even with source reduction, it would take hundreds of years to reach MCLs. (Without source reduction, the period potentially could be thousands of years.)</p> <p>Despite national performance data indicating that no technologies currently exist that can reduce DNAPLs in source areas to MCLs within a "reasonable" period, the regulators' position is that technical impracticability (TI) waivers would be available only after a demonstrated, site-specific technology failure.</p> <p>The regulators' position is that the current fence</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
V-1.3	<p>Current Planned End State: Excavation to remove suspected sources of groundwater contamination at burial grounds</p> <p>RBES: Capping and monitored natural attenuation (with either PGDP Water Policy or enhanced institutional controls; see V-1.1)</p>	<p>Implementation of the source action could pose a risk of exposure to gases to general plant workers. Workers involved in disposal of materials contaminated during implementation of the source action could also be exposed. Finally, samplers involved in groundwater monitoring activities could be exposed. Except for risks to samplers, the magnitude of these risks has not been estimated at this time.</p> <p>Risks under the RBES are limited to samplers involved in groundwater monitoring activities. An assessment of these risks under current sampling protocols determined that risks to samplers are at <i>de minimis</i> levels.⁶</p> <p><u>Scope:</u> The current planned end state assumes complete excavation of two burial grounds (C-749 Uranium Burial Ground and C-747 Contaminated Burial Yard) suspected to be sources of groundwater contamination, subsequent off-site disposal of excavated materials, and monitoring to determine the effectiveness of source removal. The RBES assumes capping and monitoring for these burial grounds.</p> <p><u>Cost:</u> The variance between the combined cost of excavating the two burial grounds, off-site disposal of excavated material, and monitoring under the current planned end state and the combined cost for capping and monitoring under the RBES is estimated to range from \$176,000,000 to \$349,000,000.</p> <p><u>Schedule:</u> The source action under the current planned end state would be completed by 2030. Capping under the RBES would be complete by 2019. Monitoring would follow both actions.</p> <p><u>Risk:</u> The only potential risks posed by these burial grounds under current conditions are from possible migration of contaminants through groundwater to off-site residents and from direct contact at the burial ground by on-site industrial workers. However, the PGDP Water Policy and/or enhanced institutional controls would eliminate risks to the public from contaminant migration under both end states, and current access controls mitigate risk from direct contact by on-site industrial workers.</p> <p>Excavation of the burial grounds under the current planned end state would remove the suspected source term, thereby reducing the amount of</p>	<p>line (located well inside the property boundary) should be used as the point of exposure.</p>	
			<p>It is the regulators' position that capping, access controls, and/or enhanced institutional controls are inadequate to achieve long-term protectiveness for <i>in situ</i> management of contamination at burial grounds; therefore, their preference is to remove the burial grounds to prevent them from serving as long-term sources of groundwater contamination.</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p>time taken to meet MCLs and shortening any monitoring period and the need for access controls. Capping of the burial grounds under the RBES would limit potential contact to the burial grounds and reduce possible migration of contamination to groundwater, but would require long-term monitoring and access controls. Off-site risks from contaminant migration would be controlled using enhanced institutional controls (see V-1.1).</p> <p>Excavation of the burial grounds would result in substantial risks to remediation workers through direct contact with wastes. (Note that one of the burial grounds to be excavated under the current planned end state contains pyrophoric uranium [i.e., uranium that spontaneously burns when exposed to air], which would pose significant inhalation risk and physical hazard to remediation workers.) Additionally, general site workers could be put at risk from exposure through inhalation of resuspended dust and vapors during excavation. Potential risks to the public and ecological receptors would also be increased during transportation of waste to the off-site disposal location. Finally, samplers involved in monitoring activities could be exposed. The magnitude of these risks has not been estimated at this time.</p> <p>Capping of the burial grounds under the RBES would result in potential risks to remediation workers through direct contact with surface soil at the burial grounds, but not through direct contact with waste. Samplers involved in monitoring activities could also be at risk of exposure. The magnitude of these risks has not been estimated at this time.</p> <p>Note that risks to remediation and general site workers would be smaller under the RBES than the current planned end state because, under the RBES, waste would not be dug up and moved, and the duration of the activity would be shorter.</p>		
V-1.4	<p>Current Planned End State: Treatment to reduce contaminant concentrations in the dissolved phase plume</p>	<p>Scope: The current planned end state assumes implementation of oxidation technologies (e.g., C-Sparge™) to remove TCE and other solvents from the dissolved phase plumes followed by monitored natural attenuation. The RBES does not assume plume actions and consists solely of monitored natural attenuation.</p>	<p>The regulators' position is that monitored natural attenuation would need to be supplemented by source actions to reduce contaminant concentrations to MCLs</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
	<p>RBES: Monitored natural attenuation (with either PGDP Water Policy or enhanced institutional controls; see V-1.1)</p>	<p>Cost: The cost for implementing oxidation technologies in the dissolved phase plumes has not been determined. The cost per year for monitored natural attenuation essentially would be the same under both the current planned end state and RBES; however, the duration of the monitoring/attenuation period could differ between the current planned end state (hundreds of years) and the RBES (potentially thousands of years).</p> <p>Schedule: Under the current planned end state, the construction and performance of the plume actions would be implemented by 2019 with associated monitoring/attenuation potentially continuing for decades. Additionally, any actions to address the dissolved phase plumes under the current planned end state would need to follow source actions to be cost-effective. (See V-1.2 and V-1.3). Under the RBES, no additional construction beyond installation of additional monitoring wells would be required; however, monitoring/attenuation potentially could continue for thousands of years.</p> <p>Risk: The only variance in risk between the current planned end state and the RBES is the amount of time necessary to achieve MCLs. The PGDP Water Policy and/or enhanced institutional controls would eliminate risks to the public from TCE and other solvents in the dissolved phase plumes under both end states. The current planned end state could reduce the length of time that the PGDP Water Policy or enhanced institutional controls would have to remain in effect depending on the extent and effectiveness of plume treatment. Note, however, that the oxidation technologies would not address other potential contaminants found in groundwater in on-site areas at PGDP (i.e., metals and radionuclides).</p> <p>Implementation of oxidation technologies would result in exposures of remediation workers to contaminated groundwater, as well as physical hazards. Workers involved in disposal of materials contaminated during implementation of the action could also be exposed. Finally, samplers involved in groundwater monitoring activities could also be exposed. Except for risks to samplers, the magnitude of these risks has not been estimated at this time.</p>	<p>in a “reasonable” timeframe (e.g., = 100 years); however, even with source reduction, it would take hundreds of years to reach MCLs. (Without source reduction, the period potentially could be thousands of years.)</p> <p>Despite national performance data indicating that no technologies currently exist that can reduce TCE and solvent concentrations in large plumes to MCLs within a reasonable time frame, the regulators’ position is that TI waivers would only be available after a demonstrated, site-specific technology failure.</p> <p>The regulators’ position is that the current fence line (located well inside the property boundary) should be used as the point of exposure.</p>	

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
V-1.5	<p>Current Planned End State: Actions to reduce solvent concentrations in groundwater discharged to surface water or control these discharges</p> <p>RBES: Continued monitoring of surface water concentrations at discharge point</p>	<p>Risks under the RBES are limited to samplers involved in groundwater monitoring activities. An assessment of these risks under current sampling protocols determined that risks to samplers are at <i>de minimis</i> levels^c.</p> <p><u>Scope:</u> The current planned end state assumes implementation of measures to reduce the solvent concentrations in the groundwater discharged to Little Bayou Creek and/or measures to control these discharges followed by monitoring. The RBES assumes continued monitoring.</p> <p><u>Cost:</u> The cost of measures to reduce concentration in discharges and/or control discharges under the current planned end state has not been determined. Monitoring costs per year essentially would be the same under both the current planned end state and the RBES.</p> <p><u>Schedule:</u> A schedule for implementation of the current planned end state actions is not available. However, the duration of monitoring under both the end states would be similar unless source and plume actions are taken. (See V-1.2, V-1.3, and V-1.4.)</p> <p><u>Risk:</u> Screening human health and ecological risk assessments have determined that risks at the discharge point are at <i>de minimis</i> levels^c for recreational user and ecological receptors. Modeling has indicated that contaminant concentrations could increase in the future, but these results and estimates of risks derived using them are uncertain. A baseline risk assessment has not been completed.</p> <p>Implementation of a technology to attenuate or control discharges would result in increased risks to remediation workers. Additionally, damage to the environment at the discharge point during implementation could lead to increased ecological risks. Finally, samplers involved in monitoring activities could be exposed. The magnitude of these risks has not been estimated at this time.</p> <p>Risks under the RBES are limited to samplers involved in monitoring activities. The magnitude of these risks has not been estimated at this time.</p>	<p>Commonwealth of Kentucky regulators' position is that Kentucky policy requires cleanup actions to either attain an E-06 risk assuming residential exposure or be supplemented with institutional controls and/or engineering barriers to attain that risk level.</p>	<p>Initiate further discussions with the public and regulators.</p>
Hazard Area 2: Surface Water Operable Unit				
V-2.1	<p>Current Planned End State:</p>	<p><u>Scope:</u> The current planned end state assumes excavation of contaminated source sediments and soils to levels that achieve a target risk of 1E-06</p>	<p>Commonwealth of Kentucky regulators'</p>	<p>Initiate further discussions with the</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
	<p>Excavation of source sediments and soils</p> <p>RBES: Excavation of sediments and soils “hot spots”</p>	<p>under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavations of “hot spots” in sediment and soil using a target risk and PCB concentration consistent with the agreed future land use. (All parties have agreed that future land use of areas currently in the industrialized areas of PGDP is industrial and that the future use of areas currently outside of the industrialized areas but on DOE property is recreational.) Therefore, under the RBES, the action in industrial areas would achieve a target risk of 1E-04 to a worker and a PCB concentration of 25 ppm. The action in recreational areas would achieve a target risk of 1E-04 to a recreational user and a PCB concentration of 1 ppm.</p> <p><u>Cost:</u> Based on existing PCB and ²³⁸U sampling results, approximately 7 to 17 times as much soil and sediment would be required to be removed under the current planned end state cleanup target than under the RBES cleanup target, resulting in a cost variance of proportional size. Because many areas have not been fully characterized, there is a high degree of uncertainty in this estimate.</p> <p><u>Schedule:</u> The investigation of the SWOU is ongoing. The completion dates under the current planned end state and RBES are 2021 and 2017, respectively.</p> <p><u>Risk:</u> Under the current state, the only potential risks posed by sediment and soils to humans are from direct contact by industrial workers and recreational users with these media. However, these risks are currently mitigated through institutional and access controls that limit exposure. Ecological receptors could be at risk in some industrial and non-industrial areas; however, a baseline ecological risk assessment confirming this has not been completed.</p> <p>Potential risk in all areas under the current planned end state would be reduced to E-06 using a residential scenario in industrial and recreational areas. Additionally, protection of ecological receptors would be demonstrated by an ecological risk assessment. Potential risk under the RBES would be reduced to a value falling within EPA’s acceptable risk range for site-related exposures (i.e., E-06 to E-04) using a worker scenario for industrial areas and a recreational user scenario in recreational</p>	<p>position is that Kentucky policy requires cleanup actions either to attain an E-06 risk assuming residential exposure or be supplemented with institutional controls and/or engineering barriers to attain that risk level.</p> <p>Commonwealth of Kentucky regulators’ position is that Kentucky policy requires that cleanup of PCBs in soils and sediments located in industrial areas must attain 1 ppm (as opposed to federal TSCA regulations allowing =25 ppm for “low occupancy areas” [e.g., industrial areas] =1 ppm for “high occupancy areas” [e.g., residential areas], and >1 ppm to = 10 ppm for “high occupancy areas” if covered by a cap with institutional controls).</p>	<p>public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
V-2.2	<p>Current Planned End State: Construction of basins to control sediment migration</p> <p>RBES: No basins with “hot spot” removal (see V-2.1)</p>	<p>areas. Additionally, protection of ecological receptors would be demonstrated by an ecological risk assessment.</p> <p>Risks during excavation and disposal under both the current planned end state and RBES would affect remediation workers, general site workers, transportation workers (off-site disposal anticipated), landfill workers, the public, and ecological receptors. The magnitude of these risks under the current planned end state and RBES have not been assessed at this time; however, because a greater amount of material would be excavated under the current planned end state than under the RBES, risks to all receptors would be expected to be greater under the current planned end state than under the RBES.</p> <p><u>Scope:</u> Under the current planned end state, construction of two basins to control sediment migration to areas outside the industrialized portions of the site is planned. Under the RBES, no basins are planned because “hot spot” removal would prevent migration of contaminated material.</p> <p><u>Cost:</u> The variance between constructing and maintaining basins under the current planned end state and not constructing the basins under the RBES is estimated to range from \$7,000,000 to \$1,000,000.</p> <p><u>Schedule:</u> The investigation to determine if sediment control basins for control of sediment migration are needed is ongoing. The decision for their construction will follow completion of that investigation. A completion date for construction would be selected as part of a decision to construct basins.</p> <p><u>Risk:</u> An analysis of the potential impact of contaminant migration from on-site ditches to recreational use areas under current conditions determined that direct contact risks to recreational users and workers were at <i>de minimis</i> levels^c.</p> <p>Under the current planned end state, remediation workers would be exposed to physical hazards during construction of the basins; however, risks from exposure to contamination would be at <i>de minimis</i> levels^c because the basins would be constructed in clean areas. Additionally, ecological receptors would be at risk due to habitat disruption.</p>	<p>Lack of representative data to make the appropriate decision.</p>	<p>Complete investigation and risk assessment to determine if risks from migration of contaminants require action.</p> <p>Initiate further discussions with the public and regulators following completion of the investigation/evaluation.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		Under the RBES, construction would not occur, and no receptors would be at risk.		
Hazard Area 3: Burial Grounds Operable Unit (Group 1)				
V-3.1	<p>Current Planned End State: Excavation of burial grounds</p> <p>RBES: Capping of burial grounds with access controls</p>	<p><u>Scope:</u> Under the current planned end state, certain burial grounds are to be excavated and materials disposed of in an off-site location. Under the RBES, these burial grounds are capped to limit exposure, and the caps are maintained, including monitoring. For both end states, the goal of the action is to reduce risk to workers by eliminating or limiting exposure to contamination associated with the burial grounds.</p> <p><u>Cost:</u> The variance between the cost of excavating the burial grounds and disposing of the materials off-site under the current planned end state versus capping and monitoring the burial grounds under the RBES is estimated to range from \$185,000,000 to \$298,000,000.</p> <p><u>Schedule:</u> The source action under the current planned end state would be completed by 2030. Capping under the RBES would be complete by 2019. Monitoring under the RBES could continue for several decades.</p> <p><u>Risk:</u> The only potential risks posed to humans are from direct contact at the burial ground by on-site industrial workers. Risks are driven by the presence of uranium isotopes, arsenic, PAHs, and PCBs in surface soils; however, current access controls mitigate risk from direct contact by on-site industrial workers. Screening ecological risk assessments determined that ecological risks for contact at the burial grounds were at <i>de minimis</i> levels, assuming future industrial use of the areas encompassing the burial grounds.</p> <p>Excavation of the burial grounds would result in substantial risks to remediation workers through direct contact with wastes. Additionally, general site workers could be put at risk from exposure through inhalation of resuspended dust and vapors during excavation. Potential risks to the public and ecological receptors would also be increased during transportation of waste to the off-site disposal location. Finally, samplers involved in monitoring activities could be exposed. The magnitude of these risks has not been estimated at this time.</p>	<p>It is the regulators' position that capping and access controls are inadequate to achieve long-term protectiveness for <i>in situ</i> management of contamination at burial grounds; therefore, their preference is to remove the burial grounds to achieve long-term protectiveness.</p> <p>It is the regulators' position that existing data are insufficient to characterize the contents and releases from the burial grounds.</p>	<p>Conduct investigation to better characterize the burial grounds.</p> <p>Initiate further discussions with the public and regulators following completion of the investigation/evaluation.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p>Capping of the burial grounds under the RBES would result in potential risks to remediation workers through direct contact with surface soil at the burial grounds. Samplers involved in monitoring activities could also be at risk of exposure. The magnitude of these risks has not been estimated at this time.</p> <p>Note that risks to remediation and general site workers would be smaller under the RBES than under the current planned end state because, under the RBES, waste would not be dug up and moved, and the duration of the activity would be shorter.</p>		
Hazard Area 4: Surface Soils Operable Unit				
V-4.1	<p>Current Planned End State: Excavation of soil</p> <p>RBES: Excavation of soil “hot spots”</p>	<p><u>Scope:</u> The current planned end state assumes excavation of contaminated soil to levels that achieve a target risk of 1E-06 under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavations of “hot spots” in soil using a target risk of 1E-04 under a worker scenario, the most likely future use of the affected areas per past agreements with the regulators and the public. The PCB concentration target under the RBES would be 25 ppm.</p> <p><u>Cost:</u> Based on existing PCB and ²³⁸U sampling results, approximately 7 to 17 times as much soil would need to be removed under the current planned end state cleanup target than under the RBES cleanup target, resulting a cost variance of proportional size. Because many areas have not been fully characterized, there is a high degree of uncertainty in this estimate.</p> <p><u>Schedule:</u> The investigation of the SSOU is not complete. For the current planned end state, the completion date is 2019. For the RBES, the completion date is 2015.</p> <p><u>Risk:</u> Under the current state, the only potential risks posed by surface soils are from direct contact by on-site industrial workers. However, these risks are currently mitigated through institutional and access controls that limit exposure. The ecological risks were determined to be at <i>de minimis</i> levels^c as long as the area remains industrial.</p>	<p>Commonwealth of Kentucky regulators’ position is that Kentucky policy requires cleanup actions to either attain an E-06 risk assuming residential exposure or be supplemented with institutional controls and/or engineering barriers to attain that risk level.</p> <p>Commonwealth of Kentucky regulators’ position is that Kentucky policy requires that cleanup of PCBs in soils and sediments located in industrial areas must attain 1 ppm (as opposed to federal</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p>Potential risk under the current planned end state would be reduced to E-06 using a residential scenario in an industrial area. Potential risk under the RBES would be reduced to a value falling within EPA’s acceptable risk range for site-related exposures (i.e., E-06 to E-04) using a worker scenario for these industrial areas.</p> <p>Risks during excavation and disposal under both the current planned end state and RBES would affect remediation workers, general site workers, transportation workers (off-site disposal anticipated), landfill workers, and the public. The magnitude of these risks under the current planned end state and RBES have not been assessed at this time; however, because a greater amount of material would be excavated under the current planned end state than under the RBES, risks over the duration of the response action likely would be greater under the current planned end state than under the RBES.</p>	<p>TSCA regulations allowing =25 ppm for “low occupancy areas” [e.g., industrial areas] =1 ppm for “high occupancy areas” [e.g., residential areas], and >1 ppm to = 10 ppm for “high occupancy areas” if covered by a cap with institutional controls).</p>	
Hazard Area 5: Permitted Landfills				
V-5.1	<p>Current Planned End State: No construction of potential CERCLA Cell; continued off-site disposal of CERCLA-derived waste</p> <p>RBES: Potential construction of CERCLA Cell; on-site disposal of CERCLA-derived waste</p>	<p>Scope: The current planned end state does not include the potential construction of a CERCLA Cell for on-site disposal of CERCLA-derived wastes. The RBES includes the potential construction of such a facility.</p> <p>Cost: The cost estimates for on-site disposal of CERCLA-derived waste, which would include the construction, operation, maintenance, and monitoring of a potential CERCLA Cell under the RBES are not complete. It is uncertain if these costs would be less than those incurred under the current planned end state, which considers transporting and disposing of CERCLA-derived waste at an off-site location.</p> <p>Schedule: The schedule for completing the evaluation of the cost-effectiveness and construction of a potential CERCLA Cell has not been established.</p> <p>Risk: No risk assessments have been completed for a potential CERCLA Cell because this would be a newly constructed facility. However, off-site disposal of waste under the current planned end state potentially could expose transportation workers and the public to waste during transportation and landfill workers during disposal. On-site disposal of waste under the</p>	<p>Commonwealth of Kentucky’s regulators’ position is that site conditions (e.g., seismic conditions and climate) are not appropriate for construction of a potential CERCLA Cell.</p> <p>Commonwealth of Kentucky’s regulators’ position is that CERCLA-derived waste should not remain at PGDP.</p> <p>Regulators’ position is that additional data is required to justify the on-site disposal of</p>	<p>Complete technical evaluation.</p> <p>Continue discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p>RBES could expose remediation workers and landfill workers; exposure to the public would be minimized through access controls at a CERCLA Cell.</p> <p>Under the RBES, potential risks from exposure to CERCLA-derived waste could be greater because this waste would remain onsite; however, the potential risks to workers, recreational users, and the public from on-site disposal would be minimized by the engineered barriers (i.e., capping and leachate collection system) and access controls included in the potential CERCLA Cell design. Additionally, potential risks from environmental contamination across the site associated with soils, sediments, and GDP infrastructure could be lower because more of these materials may be removed and disposed of in a potential CERCLA Cell, where the chance of uncontrolled contact would be minimized.</p>	<p>CERCLA-derived waste in a potential CERCLA Cell.</p>	
Hazard Area 6: Burial Grounds Operable Unit (Group 2)				
V-6.1	<p>Current Planned End State: Continuation of PGDP Water Policy</p> <p>RBES: Enhanced institutional controls</p>	<p>Scope: The current planned end state includes continuation of the current PGDP Water Policy^d. The RBES includes enhanced institutional controls^b, which would supersede the current PGDP Water Policy. Under both end states, the goal would be to reduce risks to residents from exposure to groundwater to <i>de minimis</i> levels^c.</p> <p>Cost: The cost variance has not been determined to date. The current PGDP Water Policy costs range from \$70,000 to \$100,000 per year. Depending upon the specific enhanced institutional controls, the cost variance of the enhanced institutional controls could include some cost avoidance (if the PGDP Water Policy is terminated). However, the implementation of enhanced institutional controls would include costs for acquisition of rights to restrict groundwater use and continued monitoring to ensure continued long-term effectiveness of the enhanced institutional controls.</p> <p>Schedule: The PGDP Water Policy currently is in place. Implementation of the enhanced institutional controls would be a future planned CERCLA response action.</p> <p>Risk: The expected risk variance is zero under both the PGDP Water Policy and enhanced institutional controls because each would prevent exposure to contaminated groundwater, resulting in no risk. Enhanced</p>	<p>DOE policy may limit options available under the enhanced institutional controls.</p>	<p>Initiate further discussions with the public and regulators.</p> <p>Revisit DOE policy.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p>institutional controls, however, would be more sustainable and, therefore, would result in greater long-term effectiveness because they would involve legally enforceable property restrictions and deed notices. (The agreements with landowners under the PGDP Water Policy do not restrict groundwater use, but only commit DOE to provide municipal water to replace the groundwater in return for the property owner's commitment not to use the groundwater. Thus, current or future property-owners could return to using groundwater in the home, completing this exposure pathway and potentially raising risk from <i>de minimis</i> levels.)</p>		
<p>Hazard Area 7: Legacy Waste and DOE Material Storage Areas V-7.1</p>	<p>Current Planned End State: Excavation of soil and/or decontamination of surface areas. RBES: Excavation of soil and/or decontamination of surface areas.</p>	<p><u>Scope:</u> Upon completion of characterization and disposition of all wastes and debris contained in legacy waste storage areas and DMSAs, those areas that are discovered to contain hazardous waste will be subject to the closure requirements outlined in the Agreed Order and/or RCRA Permit. Under the current planned end state, the Agreed Order provides that "final clean closure" of any underlying soils and/or surface areas must achieve a 1E-06 and hazard index of 1 under a residential scenario without use of institutional controls or engineering barriers and a PCB target level of 1 ppm. Under the RBES, excavation of any contaminated soils and/or decontamination of surface areas would target a 1E-04 and hazard index of 1 under an industrial scenario in accordance with CERCLA and a PCB target level of 25 ppm, with the option of using institutional controls or engineering barriers. <u>Cost:</u> Because characterization of the DMSAs and legacy waste storage areas is not complete, any potential impacts to underlying soils and/or surfaces are not known at this time; therefore, estimated costs are not available. <u>Schedule:</u> The Agreed Order requires characterization to be complete for all DMSAs by 2009. The Agreed Order also defines timeframes for submittal of closure plans after completion of characterization for those DMSAs and waste storage areas determined to contain hazardous wastes.</p>	<p>The Agreed Order provides that "final clean closure" of any underlying soils and/or surface areas must achieve a 1E-06 and hazard index of 1 under a residential scenario without use of institutional controls or engineering barriers. It's the Commonwealth of Kentucky's position that cleanup of PCBs in soils located in industrial areas must attain 1 ppm (as opposed to federal TSCA regulations allowing =25 ppm for "low occupancy areas" [e.g., industrial areas] =1 ppm for "high occupancy areas" [e.g., residential areas], and >1 ppm to = 10 ppm for</p>	<p>Continue discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p><u>Risk:</u> Under the current state, the only potential risks posed by surface soils and/or surface areas are from direct contact by on-site industrial workers. Characterization data collected to date indicates that these direct contact risks may approach <i>de minimis</i> levels^c. Additionally, any risks are mitigated through institutional and access controls that limit exposure. No ecological risk assessment is available.</p> <p>Potential risk under the current planned end state would be reduced to E-06 using a residential scenario in industrial areas. Potential risk under the RBES would be reduced to a value falling between E-06 and E-04 using an industrial scenario.</p> <p>Excavation and/or decontamination activities under both the current planned end state and RBES would pose a potential risk to remediation workers, general site workers, transportation workers (off-site disposal anticipated), landfill workers, the public, and ecological receptors. The magnitude of these risks under the current planned end state and RBES have not been assessed at this time; however, because a greater amount of material potentially would be available for exposure under the current planned end state than under the RBES, risks over the duration of the response action likely would be greater under the current planned end state than under the RBES.</p>	<p>“high occupancy areas” if covered by a cap with institutional controls).</p>	
<p>Hazard Area 8: Cylinder Yards and DUF₆ Conversion Facility V-8.1</p>	<p>Current Planned End State: Excavation of soil</p> <p>RBES: Excavation of soil “hot spots”</p>	<p><u>Scope:</u> The current planned end state assumes excavation of contaminated soils following completion of the DUF₆ conversion mission to levels that achieve a target risk of 1E-06 under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavation of “hot spots” in soil using a target risk of 1E-04 under a worker scenario, the most likely future use of the affected areas per past agreements with the regulators and the public. The PCB concentration under the RBES would be 25 ppm.</p> <p><u>Cost:</u> Based on existing PCB and ²³⁸U sampling results, approximately 7 to 17 times as much soil would need to be removed under the current planned end state cleanup target than under the RBES cleanup target, resulting a cost variance of proportional size. Because many areas have not been fully characterized, there is a high degree of uncertainty in this estimate.</p>	<p>Commonwealth of Kentucky regulators’ position is that Kentucky policy requires cleanup actions to attain either an E-06 risk assuming residential exposure or be supplemented with institutional controls and/or engineering barriers to attain that risk level.</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p><u>Schedule:</u> No schedule is available because the conversion mission is expected to last for decades.</p> <p><u>Risk:</u> Under the current state, the only potential risks posed by surface soils are from direct contact by on-site industrial workers. However, these risks are currently mitigated through institutional and access controls that limit exposure. The ecological risks are expected to be at <i>de minimis</i> levels^c as long as the area remains industrial.</p> <p>Potential risk under the current planned end state would be reduced to E-06 using a residential scenario in an industrial area. Potential risk under the RBES would be reduced to a value falling within EPA’s acceptable risk range for site-related exposures (i.e., E-06 to E-04) using a worker scenario for these industrial areas.</p> <p>Risks during excavation under both the current planned end state and RBES would affect remediation workers, general site workers, transportation workers (off-site disposal anticipated), landfill workers, and the public. The magnitude of these risks under the current planned end state and RBES have not been assessed at this time; however, because a greater amount of material would be excavated under the current planned end state than under the RBES, risks over the duration of the response action likely would be greater under the current planned end state than under the RBES.</p>	<p>Commonwealth of Kentucky regulators’ position is that Kentucky policy requires that cleanup of PCBs in soils and sediments located in industrial areas must attain 1 ppm (as opposed to federal TSCA regulations allowing =25 ppm for “low occupancy areas” [e.g., industrial areas] =1 ppm for “high occupancy areas” [e.g., residential areas], and >1 ppm to = 10 ppm for “high occupancy areas” if covered by a cap with institutional controls).</p>	
Hazard Area 9: GDP Facilities				
V-9.1	<p>Current Planned End State: Continuation of PGDP Water Policy</p> <p>RBES: Enhanced institutional controls</p>	<p><u>Scope:</u> The current planned end state includes continuation of the current PGDP Water Policy^a. The RBES includes enhanced institutional controls^b, which would supersede the current PGDP Water Policy. Under both end states, the goal would be to reduce risks to residents from exposure to groundwater to <i>de minimis</i> levels^c.</p> <p><u>Cost:</u> The cost variance has not been determined to date. The current PGDP Water Policy costs range from \$70,000 to \$100,000 per year. Depending upon the specific enhanced institutional controls, the cost variance of the enhanced institutional controls could include some cost avoidance (if the PGDP Water Policy is terminated). However, the implementation of enhanced institutional controls would include costs for</p>	<p>DOE policy may limit options available under the enhanced institutional controls.</p>	<p>Initiate further discussions with the public and regulators.</p> <p>Revisit DOE policy.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
V-9.2	<p>Current Planned End State: Excavation of soil</p> <p>RBES: Excavation of soil “hot spots”</p>	<p>acquisition of rights to restrict groundwater use and continued monitoring to ensure continued long-term effectiveness of the enhanced institutional controls.</p> <p><u>Schedule:</u> The PGDP Water Policy is currently in place. Implementation of the enhanced institutional controls would be a future planned CERCLA response action.</p> <p><u>Risk:</u> The expected risk variance is zero under both the PGDP Water Policy and enhanced institutional controls because each would prevent exposure to contaminated groundwater, resulting in no risk. Enhanced institutional controls, however, would be more sustainable and, therefore, would result in greater long-term effectiveness because they would involve legally enforceable property restrictions and deed notices. (The agreements with landowners under the PGDP Water Policy do not restrict groundwater use but only commit DOE to provide municipal water to replace the groundwater in return for the property owner’s commitment not to use the groundwater. Thus, current or future property-owners could return to using groundwater in the home, completing this exposure pathway and potentially raising risk from <i>de minimis</i> levels.)</p> <p><u>Scope:</u> Excavation of contaminated soils is planned under both the current planned end state and RBES as part of D&D of the GDP. The current planned end state assumes excavation of contaminated soils to levels that achieve a target risk of IE-06 under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavation of “hot spots” in soil using a target risk of IE-04 under a worker scenario, the most likely future use of the affected areas per past agreements with the regulators and the public. The PCB concentration under the RBES would be 25 ppm.</p> <p><u>Cost:</u> Based on existing PCB and ²³⁸U sampling results, approximately 7 to 17 times as much soil would need to be removed under the current planned end state cleanup target than under the RBES cleanup target, resulting in a cost variance of proportional size. However, because most areas associated with GDP D&D have not been fully characterized, there is a very high degree of uncertainty in this estimate.</p>	<p>Commonwealth of Kentucky regulators’ position is that Kentucky policy requires cleanup actions to attain either an E-06 risk assuming residential exposure or be supplemented with institutional controls and/or engineering barriers to attain that risk level.</p> <p>Commonwealth of Kentucky regulators’ position is that</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
		<p><u>Schedule:</u> The schedule for GDP D&D and the subsequent Comprehensive Site Operable Unit (CSOU) will be determined 6 months before GDP shutdown.</p> <p><u>Risk:</u> Under the current state, the only potential risks posed by surface soils are from direct contact by on-site industrial workers. However, these risks are currently mitigated through institutional and access controls that limit exposure. The ecological risks likely are at <i>de minimis</i> levels^c because the GDP facilities are in industrialized areas of PGDP.</p> <p>Potential risk under the current planned end state would be reduced to E-06 using a residential scenario in industrial areas. Potential risk under the RBES would be reduced to a value falling within EPA’s acceptable risk range for site-related exposures (i.e., E-06 to E-04) using a worker scenario for these industrial areas.</p> <p>Risks during excavation under both the current planned end state and RBES would affect remediation workers, general site workers, transportation workers (off-site disposal anticipated), landfill workers, the public, and ecological receptors. The magnitude of these risks under the current planned end state and RBES have not been assessed at this time; however, because a greater amount of material would be excavated under the current planned end state than under the RBES, risks over the duration of the response action would likely be greater under the current planned end state than under the RBES.</p>	<p>Kentucky policy requires that cleanup of PCBs in soils and sediments located in industrial areas must attain 1 ppm (as opposed to federal TSCA regulations allowing =25 ppm for “low occupancy areas” [e.g., industrial areas] =1 ppm for “high occupancy areas” [e.g., residential areas], and >1 ppm to = 10 ppm for “high occupancy areas” if covered by a cap with institutional controls).</p>	
V-9.3	<p>Current Planned End State: Treatment to attain source reduction</p> <p>RBES: Monitored natural attenuation (with either PGDP Water Policy or enhanced institutional controls; see V-1.1)</p>	<p><u>Scope:</u> The current planned end state assumes implementation of DNAPL source reduction actions using <i>in situ</i> heating technologies in combination with monitored natural attenuation as part of D&D of the GDP or as part of the CSOU. The RBES does not assume source actions and consists solely of monitored natural attenuation with a point of exposure established at the DOE property boundary or at a downgradient location in accordance with the requirements of CERCLA.</p> <p><u>Cost:</u> The combined costs of implementing <i>in situ</i> heating technology at the DNAPL source areas associated with D&D of the GDP are unknown. The cost per year for monitored natural attenuation would be essentially the same under both the current planned end state and RBES; however, the</p>	<p>The regulators’ position is that monitored natural attenuation would need to be supplemented by source actions to reduce contaminant concentrations to MCLs in a “reasonable” timeframe (e.g., = 100 years); however, even with source reduction, it would take hundreds of</p>	<p>Initiate further discussions with the public and regulators.</p>

Table 5.1 (continued)

ID. No.	Description of Variance	Impacts	Barriers in Achieving RBES	Recommendations
	<p>duration of the monitoring/ attenuation period could differ between the current planned end state (hundreds of years) and the RBES (potentially thousands of years).</p> <p><u>Schedule:</u> The schedule for GDP D&D and the subsequent CSOU will be determined 6 months before GDP shutdown.</p> <p><u>Risk:</u> The only variance in risk between the current planned end state and the RBES is the amount of time necessary to achieve MCLs. The PGDP Water Policy and/or enhanced institutional controls would eliminate risks to the public from off-site migration of DNAPL under both end states. However, the current planned end state could reduce the amount of time necessary to meet MCLs, thereby shortening the time period that the PGDP Water Policy or enhanced institutional controls would have to remain in effect.</p> <p>Implementation of <i>in situ</i> heating technology under the current planned end state could result in exposures of remediation workers to contaminated soil and groundwater and, potentially, gases, as well as physical hazards. Implementation of the source action could pose a risk of exposure to gases to general plant workers. Workers involved in disposal of materials contaminated during implementation of the source action could also be exposed. Finally, samplers involved in groundwater monitoring activities could be exposed. Except for risks to samplers, the magnitude of these risks has not been estimated at this time.</p> <p>Risks under the RBES are limited to samplers involved in groundwater monitoring activities. An assessment of these risks under current sampling protocols determined that risks to samplers are at <i>de minimis</i> levels^c.</p>	<p>years to reach MCLs. (Without source reduction, the period potentially could be thousands of years.)</p> <p>Despite national performance data indicating that no technologies currently exist that can reduce DNAPLs in source areas to MCLs within a “reasonable” period, the regulators’ position is that TI waivers would only be available after a demonstrated, site-specific technology failure.</p> <p>The regulators’ position is that the current fence line (located well inside the property boundary) should be used as the point of exposure.</p>		

^a The PGDP Water Policy is a removal action instituted to limit the use of potentially contaminated groundwater by off-site residences. This policy is discussed in *Action Memorandum for the Water Policy at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1201&D2, United States Department of Energy, Paducah, KY, June 1994 (DOE 1994).

^b Enhanced institutional controls under the RBES would be implemented on both DOE- and non-DOE-owned property. These controls could range from implementation of legal agreements with surrounding landowners to place enforceable restrictions on groundwater use to DOE’s acquiring rights from surrounding property owners and directly implementing restrictions on groundwater and property use.

^c “*De minimis*” levels of risk, as used here, are defined as risks determined to be at or below the lower limit of EPA’s acceptable risk range for site-related exposures (i.e., E-06) by the receptor(s) mentioned.

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Attachment 3

MATERIALS FROM JOHN TANNER (CAB) PRESENTATIONS

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End State Vision for PGDP

**Presentation to the
Paducah Area Chamber of Commerce
Community and Business Development Committee
Bill Tanner, Chair
March 9, 2004**



Background

- The Paducah Gaseous Diffusion Plant (PGDP) Citizens Advisory Board (CAB) is a U.S. Department of Energy (DOE) Environmental Management (EM) Site-Specific Advisory Board (SSAB) that is chartered to provide advice to local DOE site officials concerning cleanup standards, environmental restoration, waste management and disposition, future land use, long-term stewardship, risk assessment and management, and science and technology activities
- The PGDP CAB is one of nine SSABs nation-wide:





Background

- In November 2002, the CAB asked DOE for input regarding a list of topics that the Board would work from for the upcoming year
- DOE responded that the CAB should focus on long-term stewardship and develop an End State Vision for PGDP
- The CAB has been seeking input and has conducted research to develop a preliminary vision that incorporates the needs of the community





Background

Current Situation at PGDP:



The U.S. Department of Energy owns the site and is responsible for the environmental remediation of the property



USEC leases certain areas from DOE to enrich uranium. USEC is expected to continue operations for another 6 to 8 years and has not decided if the plant will be shut down or be used as a backup facility to its sister plant in Portsmouth, OH

- Reindustrialization has already begun by the decision to build the Depleted Uranium Hexafluoride (DUF6) Conversion Facility
- Decisions made today will provide guidance for future generations



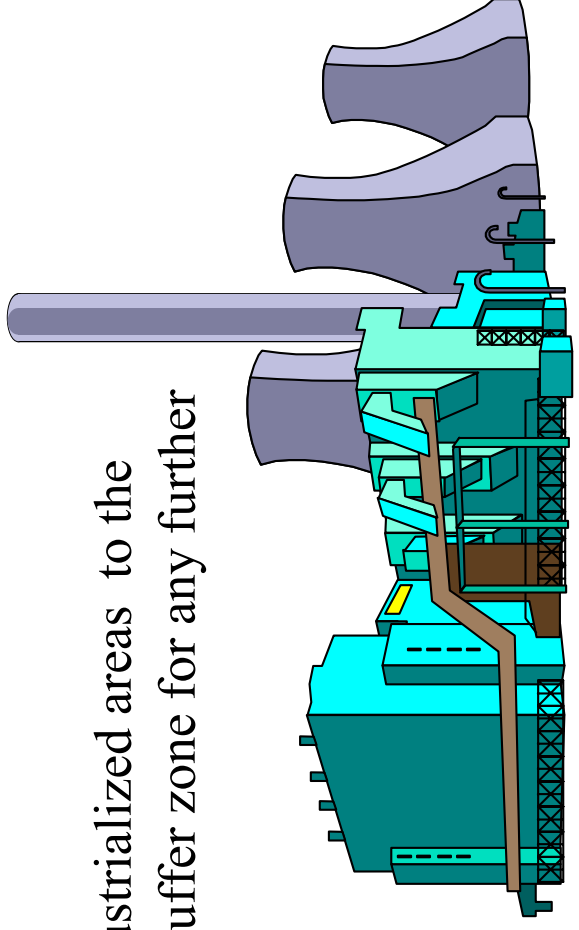
End State Vision

Goal:

- To protect human health and the environment while preparing for a viable economic future for the Paducah site

Implementation of Goal:

- Continued industrial use of existing industrialized areas
- Continued recreational/wildlife use of those areas presently leased to West Kentucky Wildlife Management Area (WKWMA)
- DOE should deed non-industrialized areas to the WKWMA but maintain a buffer zone for any further reindustrialization efforts





Specifics to Achieve End State Vision

It is recommended that:

- DOE investigate ways to modify security/access for the reindustrialization process to move forward
- DOE consult with the Paducah Area Reuse Organization (PACRO) and the Greater Paducah Economic Development Council (GPEDC) to investigate buildings currently scheduled for Decontamination and Decommissioning (D&D) to determine any possible value
 - Buildings scheduled for re-use should be completely decontaminated
- DOE thoroughly characterize any contamination remaining at the site
 - Contracts with reindustrialization companies should include an indemnity clause that states they are not responsible for existing contamination (Brownfield regulations)



Specifics to Achieve End State Vision

It is recommended that:

- DOE use the footprint of the four large process buildings for disposition instead of an on-site CERCLA waste disposal facility
 - Proposed CERCLA cell would be a 70 acre, 112 feet tall hazardous waste landfill that may impact reindustrialization
 - Encapsulate waste, mixed with concrete, in buildings
 - May simplify future monitoring
- DOE remove all burial grounds
 - Reindustrialization without top secret dump sites is more attractive to interested companies
- DOE rehabilitate infrastructure
- DOE resolve issue of institutional controls for off-site groundwater contamination
 - Enter a long-term agreement with those affected by DOE's Water Policy



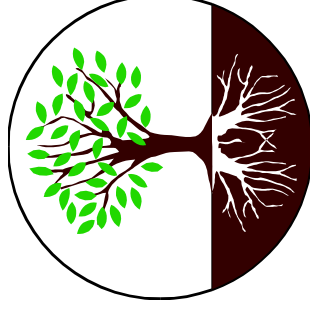
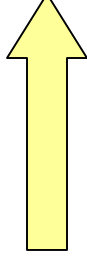


Specifics to Achieve End State Vision

It is recommended that:

- DOE consider the taxpayer when making financial decisions
 - Concern that local taxpayers will be left the cost of rehabilitation later
 - Need to look into the current cost to DOE versus the cost to the taxpayer on a long-term basis
- DOE's Office of Environmental Management (EM) keep public informed about the transition process to the Office of Legacy Management (LM)
 - Address monitoring of the air and water and spread of remaining pollutants

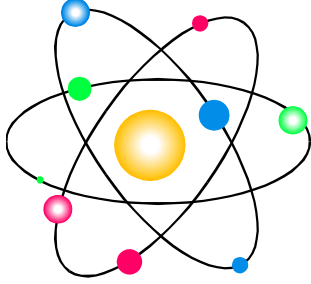
EM → **LM**





Reindustrialization Possibilities

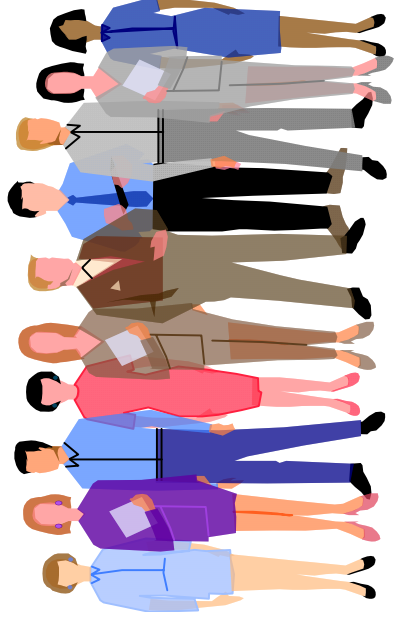
- Encourage environmental remediation companies with innovative technologies to occupy area (do not want new polluters or re-polluters)
 - Possible examples of companies that might meet reindustrialization criteria:
 - ✓ UK is researching ways to remove neptunium from nickel
 - ✓ UK is researching use of converted depleted uranium in batteries
 - ✓ Establish facility for Hazardous Material (HAZMAT) Training as well as Emergency Response Training that can be utilized by companies in the tri-state area
 - ✓ Governor's office is looking into the possibility of locating a research technology park in western Kentucky





Summary

- The CAB is working toward making a recommendation to DOE incorporating the draft End State Vision for PGDP
- The CAB, as the community's representative to DOE, is seeking your input to finalize this recommendation
- The CAB would also appreciate a letter of endorsement from your group or organization
- We hope that a unified voice will lead to the success of this recommendation and positively influence DOE's decision making process



March 17, 2004

MEMORANDUM

TO: Bill Tanner, Chairman
Citizen Advisory Board
111 Memorial Drive
Paducah, KY 42001

FROM: John Anderson, Director
Paducah-Area Community Reuse Organization
PO Box 588
Mayfield, KY 42066

RE: PACRO submits the following comments to the CAB's request for support or the End State Vision (enclosure 1)

First, PACRO believes the subject is far too detailed and complex to respond to DOE under the imposed deadline. The PACRO agrees with the individual comments with the exceptions outlined, PACRO has undertaken an effort to develop a professionally prepared Master Plan, which will draw upon the expertise of a nationally recognized site development firm to analyze the best uses for the site, in competition with the many other industrial sites that are available across the country. Since DOE is unable to provide information relative to the ultimate use of the end state decision document, PACRO requests that final action on the document be deferred until this plan has been prepared.

Next, PACRO comments follow each of the twelve (12) CAB recommendations below to achieve the goal of the "End State Vision":

1. DOE is encouraged to structure environmental remediation activities to allow continued nuclear and non-nuclear industrial use of the existing industrialized area and to continue recreation/wildlife use of those areas presently leased to WKWMA.
 - Qualified support of #1, PACRO does not support the line "and to continue recreation/wildlife use of those areas presently leased to WKWMA". This limits the flexibility of reindustrialization and appears to fall outside the charter of the CAB in recommending property ownership by a specific entity.
2. DOE begins investigating means to modify security access to non-USEC leased area, allowing the reindustrialization process to move forward.
 - PACRO supports #2.
3. DOE begin consultation with PACRO, GPEDC, and other involved parties to inventory and investigate buildings and facilities to determine reindustrialization potential value.
 - PACRO supports the development of a Master Plan for the site, that includes the above CAB recommendation.

4. DOE decontaminate the buildings, facilities, and surrounding grounds (scheduled for reuse) to the highest level necessary, allowing this community every opportunity to obtain non-nuclear tenants for the site.
 - PACRO will support only after the publication of a Master Plan for the site.
5. DOE begin physical rehabilitation for infrastructure facilities identified as having potential for the reindustrialization process.
 - PACRO will support only after the publication of the Master Plan.
6. DOE thoroughly characterize any contamination remaining at the site and adjoining property, after all environmental remediation activities are complete. This will allow the issuance of state and federal "covenant not to sue", or an equivalent document, for future tenants and property owners.
 - PACRO supports protection for new property owners, such as found in "10 CFR 770" and the current case law, as well as, any further protection that can be agreed upon for example legislation similar to the Brownsfield legislation to hold future owners harmless.
7. DOE investigate all possible alternatives to the proposed Comprehensive Environmental Recovery, Compensation, and Liability Act waste disposal facility. Realizing the four gaseous diffusion process buildings have little, if any, potential for reindustrialization, an above-ground concrete encapsulation of final D&D waste, utilizing the footprints of these buildings, is more acceptable to this community and the results may lower long-term costs for both Environmental Management (EM) and Legacy Management (LM).
 - Qualified support of #7, the first issue is where is the best place to put this: a) outside the fence as you approach the fenced area (may never get the prospective client in to the site; or b) inside the fence in the recommended buildings, which has the potential to run the client off once he arrives.
Secondly, the CAB recommendation goes beyond inside versus outside and is very specific about how to dispose of the waste, support implies support for inside over outside and the technique, PACRO does not have the technical expertise to support the technical solution, as well.
8. DOE plan and initiate removal of all burial grounds within the industrial area. The potential for contaminant migration in the air, soil, groundwater and surface water is greatly increased if the burial grounds remain. The unexcavated burial grounds will negatively impact future industrial options for the site.
 - Abstain from support of #8. After hearing both DOE and the CAB points on this issue, it appears that #8 if accepted over the objections of DOE will increase both money and time spent on clean up without necessarily impacting on reindustrialization. However, this is a technical issue that PACRO does not have the expertise to offer a recommendation on. If certain burial grounds were safely remediated in place, could the impact to potential reindustrialization, could be a show stopper, a limitation, minor inconvenience, etc. There maybe some variation on how DOE might be remediated in place in a manner that minimizes or eliminates impacts to reindustrialization.
9. DOE, within two years, resolve the issue of institutional controls, compensation, or "buy out" with the property owners affected by off-site groundwater contamination.

- Qualified support of #9 based on the outcome of a thorough Master Plan study of the property suggested for purchase. On Thursday night, one of the CAB members present stated she had seen a DOD President that would allow for PACRO or another entity to purchase the property outside the DOE property, but inside the water policy box. This needs to be fully discussed prior to full PACRO support. Additionally, the time frame of two years, based on the time it has taken the Park Authority to move appears too short.
10. DOE begin a public information/involvement process as soon as possible to educate the community on the transition from the Office of EM to the Office of LM, specifically addressing issues such as, but not limited to, long-term taxpayer costs (is the best financial decision for EM also the best financial decision for taxpayers throughout LM activities) LM monitoring of ht site, and if necessary, responding to new or migrating contaminants.
 - Unqualified support of #10. Since the cleanup agreements extend to the end of the next decade, there should be a strong justification for the urgency of getting legacy management involved so soon if DOE is to be influenced.
 11. DOE remove sources and potential sources of off-site groundwater contamination.
 - Abstain, on #11, based on the lack of technical expertise. How does DOE remove a potential source?
 12. DOE is encouraged to begin immediately working with the local communities to explore possibilities which address the three concerns listed above. The CAB offers the following as a means to begin achieving the common goal of this community:
 - ✓ Provide on-site facilities for environmental remediation/innovative technology companies.
 - ✓ Provide on-site facilities for the research being performed by the University of Kentucky for neptunium removal from nickel and use of converted depleted uranium. Upon success of this research, provided the necessary production facilities.
 - ✓ Explore the potential for the on-site development of Hazardous Material and Emergency Response Training Facility.
 - ✓ Explore the possibility of establishing an energy research technology park at the site.
 - PACRO supports all avenues to reindustrialization, not just the limited list supported by the CAB.

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ACT
(Active Citizens for Truth)
6715 Metropolis Lake Road
West Paducah, KY 42086



March 18, 2004

Mr. William Tanner, President
Citizens Advisory Board
131 Memorial Drive
Paducah, KY 42003

RE: CONSENSUS RECOMMENDATION: 04-07

Dear Mr. Tanner:

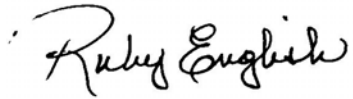
Active Citizens for Truth (ACT) applauds the efforts of the Paducah Gaseous Diffusion Plant (PGDP) Citizens Advisory Board (CAB) for their attempt to breach the gap that exists between the Department of Energy, Kentucky regulators, elected officials, as well as business and community interests. It is our hope that consensus recommendation 04-07, entitled "End State Vision for the Paducah Gaseous Diffusion Plant Site," can become the inauguration of reconciliation between these varying interests. On March 18, 2004, ACT Members voted to endorse CAB recommendation 04-07; as a first step in furthering a unified approach for solving the problems that exist at the Paducah Gaseous Diffusion Plant and its environs.

ACT members wish to make it known that this is not a blanket endorsement for everything that might evolve out of this proposal. Obviously, the very general nature of this recommendation necessitates continued consensus building as a more detailed view of the end state evolves. Further, it is our belief that the stated goal "to protect human health and the environment while preparing for a viable economic future for the Paducah site" is an illustrious destination worth pursuing. Re-industrialization using innovative technology for remediation has the potential to advance this goal. ACT does not and will not support re-industrialization efforts that include (but not limited to) environmental remediation companies using incineration technologies; treatment, storage, and disposal technologies; any other technologies that bring additional waste to the Paducah site for treatment and/or disposal. Specific to the achievement of the end state, ACT also finds that the encapsulation of on-site CERCLA waste is subjective to engineering design and practices, type of shielding material, containment and monitoring, and so forth.

And finally, while ACT continues to endorse a long-term Water Policy agreement, we are also seeking other solutions.

Saying this, ACT members grant their endorsement of Consensus Recommendation: 04-07.

Sincerely,

A handwritten signature in black ink that reads "Ruby English". The signature is written in a cursive style with a large, looping initial "R".

Ruby English,
ACT Committee Chairperson

Attachment 4

FEBRUARY 16, APRIL 1, AND APRIL 22, 2004. *PADUCAH SUN* ARTICLES

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Monday, February 16, 2004; Paducah, Kentucky

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"Vision" sought on future for Paducah plant

Public support is asked by a citizens' group for complete cleanup that will allow use of the factory for other purposes.

By **Joe Walker** jwalker@paducahsun.com--
270.575.8650

A citizens' group wants the Department of Energy to clean up the Paducah uranium enrichment plant to be fit for other use after it closes early next decade.

But a draft "vision" falls short of that goal and public support is needed to persuade federal bureaucrats not to leave the factory uninhabitable once most of its 1,300 workers are gone, the group says.

Among other things, the DOE plan assumes that massive groundwater contamination beneath the plant would be left for nature to clean up, rather than spend as much as \$140 million trying to eliminate sources of the pollution.

"We don't believe that will get us to the point that the plant is safe for humans and the environment," said Bill Tanner, chairman of the plant citizens' advisory board. "We're also concerned that it wouldn't permit reindustrialization, so it would have a severe economic impact."

The issue gained greater significance last



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month when USEC Inc. announced that starting in 2010, it will replace the outdated plant with gas centrifuge technology in Piketon, Ohio. Closing the Paducah plant is expected to take several years after USEC gradually switches from one technology to the other.

DOE officials say the vision document is merely a tool that looks at hazards and health risks. They say it isn't binding and doesn't affect agreements such as one signed last fall with the state of Kentucky to accelerate cleanup. Mark York, spokesman for the Kentucky Environmental and Public Protection Cabinet, said the state will respond to the plan by Friday's deadline.

Comments received by Friday will be addressed at a 7 p.m. workshop on Feb. 26 at the DOE Information Center, 115 Memorial Drive. The department will take comments after that, but plans to submit a final document to Washington headquarters by March 30.

Seeking consensus, Tanner is talking with community leaders, plant neighbors, environmental groups and others. He will meet Wednesday with the executive committee of the Paducah Area Community Reuse Organization, which is promoting other industrial uses for the plant. The citizens' board will discuss the plan again Thursday at its monthly meeting in the same building as the information center.

"We're trying to get their input, but more importantly we're asking these groups to provide a letter of endorsement," Tanner said. "We have to start somewhere, and if we're able to provide headquarters with more unified voice, we'll get more attention."

Tanner said the board recommends that:

Work start immediately with DOE, PACRO and the Greater Paducah Economic Development Council to determine which plant buildings have potential for other industrial use. They should not be torn down but cleaned

up enough to be safe for new occupants.

Governmental laws be checked so that new tenants aren't liable for past contamination. Brownfield regulations exclude superfund sites such as the Paducah plant, but DOE regulations do indemnify certain companies that use government property.

DOE establish long-term agreements to provide free municipal water to 121 customers — mostly homes and some businesses — in return for not using wells that are or could become contaminated. Agreements are now for five years, said Tanner, superintendent of West McCracken Water District. "They need to remove that doubt and make it permanent,"

Currently, DOE spends \$70,000 to \$100,000 a year providing city water. The plan calls for continuing that practice, but also taking other measures ranging from putting enforceable restrictions on groundwater use to acquiring property rights.

Tanner said there is no technology to clean up the groundwater, but the board wants to be sure that "we've done all we can do" scientifically before the water is left to nature. Regulators insist on source cleanup, but even so, it will take hundreds of years to make the aquifer reach drinking water standards, DOE says. Without cleanup, it could take thousands of years.

Director John Anderson said a chief PACRO concern is the condition of buildings and other resources that make the plant marketable. Among other things, the group wants to clean and recycle contaminated nickel, but there is a national safety ban by DOE on putting scrap metal at its plants into commercial use.

"The concern we have is that we work through this as a community," Anderson said. "I don't think it needs to be just the advisory board and PACRO. The whole community and DOE have roles to play."

PACRO faces extinction because of Energy

Department cutbacks. Tanner said his board is concerned and may recommend other means to keep PACRO alive to help market the plant.

Last August, seven of the board's 18 members quit, claiming DOE was hiding information about conditions at the plant and rejecting board recommendations. One was former chairman Mark Donham, who continues to attend meetings.

Donham said he is worried about many "variances" in the new end-use plan compared with an older one, such as not cleaning up sources of groundwater pollution and not digging up uranium burial grounds. He said \$1 billion has been spent so far with little to show for cleanup.

"This should be of great concern to Paducah," he said, "because there is going to be no reindustrialization of that site with a contaminated groundwater plume under it and uranium still buried there."

The draft is available on the Web at www.bechteljacobs.com/pad_reports.shtml or at the DOE Environmental Information Center, 115 Memorial Drive, 554-3004. Office hours are 9 a.m. to 5 p.m. weekdays.

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Unlikely DOE cleanup at plant

The Bush administration tells the local Citizens Advisory Board is told the site will have no use besides hazardous waste storage.

By **Joe Walker** jwalker@paducahsun.com--
270.575.8650


The Department of Energy seems uninterested in cleaning up its Paducah nuclear fuel plant enough to attract other industrial users after the factory closes early next decade.

That's the view of Bill Tanner, chairman of the plant Citizens Advisory Board, which sent 12 recommendations Tuesday to DOE officials in Washington. The group wants the department to clean up the plant sufficiently to protect the public and preserve jobs after operator USEC Inc. replaces it with a new gas centrifuge plant in Piketon, Ohio, around 2010.

"I'm afraid the Paducah site will never be usable for anything else," Tanner said. "I think it will basically end up being just a dedicated hazardous waste site."

Tanner said his concern stems from working with DOE officials in recent months as the board compiled the recommendations. DOE has taken a much more conservative approach to the cleanup during the Bush administration, he said.

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Tanner cited a recent speech in which Jessie Roberson, DOE assistant secretary for environmental management, said cleanup would be achieved based on the health risk that contamination poses. "I think that's the handwriting on the wall," he said.

A DOE draft "vision" document assumes that massive groundwater contamination beneath the Paducah plant would be left for nature to clean up, rather than spend as much as \$140 million trying to eliminate sources of the pollution. The board wants DOE to clean up the sources and eliminate all burial grounds to prevent pollution from migrating.

The recommendations were accompanied by support letters from the Paducah Area Community Reuse Organization, a DOE-funded economic development group, and from the Active Citizens for Truth, a plant neighbor group. Tanner said he hopes to secure similar letters from other local organizations this month. Various community leaders have said it is critical that the 1,300-worker plant be cleaned up enough to have an industrial life after it closes.

Other recommendations:

Clean up the plant for further industrial use and continued recreational use of the wildlife management land around the plant.

Characterize any post-closure contamination with the idea of eliminating liability for future industrial users.

Move "reindustrialization" forward by making parts of the plant more accessible, decontaminating buildings, improving infrastructure, and talking with PACRO and other groups about the value and reuse potential of plant assets.

Rather than building a controversial landfill, consider using the plant's four huge process buildings (the two largest ones cover 26 acres) to store hazardous waste sealed in concrete. The buildings have little value for future

industrial use.

Within two years, establish permanent agreements with 121 homes and businesses that now receive free municipal water because of real or threatened groundwater contamination, or "buy out" owners of contaminated property.

As soon as possible, educate the community on issues such as the long-term taxpayer costs of dealing with environmental problems after the plant closes.

Provide plant facilities for companies dealing with cleanup technology and for University of Kentucky research to clean up and recycle plant waste, such as nickel and depleted uranium. Explore plant development of hazardous material and emergency response training facilities, and an energy research technology park.

Building a consensus for the recommendations has shown how little people really know about plant cleanup, Tanner said. "They think DOE is cleaning it up, and when it's done, the plant will be clean, which isn't necessarily the case."

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Money sought by PACRO to buy land

The group hopes to use \$15 million to purchase land around the plant.

By **Joe Walker** jwalker@paducahsun.com--
270.575.8650

An economic development group is seeking nearly \$18 million from Congress to help develop a regional industrial park and find new uses for the Paducah nuclear fuel plant after it closes early next decade.

Of the request, \$15 million would be used to buy neighboring private land that either is contaminated or threatened by groundwater pollution. Land purchases may be 10 to 15 years away, assuming the money is granted, a study is done saying the property would be best used industrially and land owners agree to sell, said John Anderson, director of the Purchase Area Community Reuse Organization.

"This isn't something that will happen right away. A lot of things have to fall into place to make this possible," he said. "Some people will favor it; some will oppose it."

Although they are interested, members of the Kentucky delegation are taking a "wait-and-see" approach because of federal budgetary problems, Anderson said. PACRO itself could become defunct unless Congress steps in. The Department of Energy no longer plans to fund the group, established in 1997 to offset nuclear plant job losses.

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At Wednesday's executive committee meeting, Anderson said the money is being sought in three phases over several years:

\$500,000 for an initial nuclear plant master plan, \$586,800 to market the Purchase Area Regional Industrial Park in northern Graves County and \$995,000 to run gas lines from Mayfield to the regional park.

\$500,000 for tests to determine if contaminated scrap nickel at the plant can be sufficiently cleaned for commercial reuse. PACRO hopes to create jobs through recycling 9,700 tons of nickel, whose value has been estimated at \$8 million to \$10 million.

\$15 million to buy land around the nuclear plant that homeowners and business owners say is devalued. Portions of the money would come annually from the plant cleanup budget, perhaps over 10 to 15 years. The plan would save the government about \$100 million of the more than \$1 billion cost of trying to clean up the massive groundwater contamination, which stretches from the plant to the Ohio River.

PACRO would buy the land and resell it to one or more industrial firms, assuming an independent study shows the idea is preferable and in the best interest of the community. The study of private-land use would be part of a second master plan. The first would deal with industrial use of the plant and adjacent government land after the plant closes.

DOE officials "don't oppose" buying private land as long as the department doesn't own the property, Anderson said. The plan has tentative support of the plant's citizens' advisory board, which includes some plant neighbors.

Plant board Chairman Bill Tanner has expressed serious doubt that DOE will clean up the plant for continued industrial use. In late March, the board gave the agency 12 recommendations to clean up the plant sufficiently to protect the public and preserve jobs after operator USEC Inc. replaces it with a new gas centrifuge plant in Piketon, Ohio,

around 2010.

Within two years, the board wants the Energy Department to establish permanent agreements with 121 homes and businesses that now receive free municipal water because of real or threatened groundwater contamination, or "buy out" owners of contaminated property. If all goes well, purchase offers would someday be made to those with free water, Anderson said.

"We don't want condemnation proceedings, and the congressional delegation doesn't want condemnation proceedings," he said. "If people don't want to sell their property at a reasonable price, then they should be allowed to keep it as long as they want."

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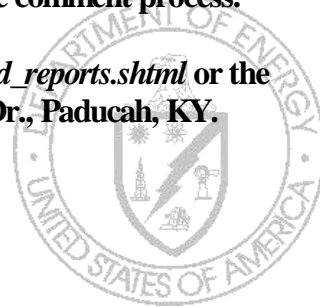
**U.S. Department of Energy
RISK-BASED END STATE
PUBLIC WORKSHOP**

DOE will host a public workshop Thursday, February 26, 2004 at 7:00 p.m. to discuss the Draft Risk-Based End State Vision document for the Paducah Gaseous Diffusion Plant. The document is an analytical tool to assure environmental cleanup efforts are consistent with the site's future use planning. The workshop is an opportunity to discuss details of the document and provide an exchange of information to aid in the comment process.

The draft is available at www.bechteljacobs.com/pad_reports.shtml or the Environmental Information Center, 115 Memorial Dr., Paducah, KY.

For more information, call (270) 441-6819.

7:00 p.m. - Thursday, February 26, 2004
Environmental Information Center
115 Memorial Drive, Paducah, KY



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Common Points Raised by Stakeholder Comments for Groundwater Operable Unit

1. The Water Policy (in its current form or in some other form) needs to be made permanent.
2. There needs to be an attempt to clean up the groundwater and its sources of contamination before using natural attenuation only.
3. Without cleanup, including source actions, the plume will continue to spread and eventually extend beyond the Water Policy box.
4. Burial ground sources of groundwater contamination should not simply be capped.

Common Points Raised by Stakeholder Comments for Surface Water Operable Unit

1. Addressing hot spots inside the fence using cleanup goals set at a target risk of E-04 for the industrial worker and PCBs at 25 ppm will not adequately address risks.
2. Addressing hot spots outside the fence using cleanup goals set at a target risk of E-04 for the recreational user and PCBs at 1 ppm will not adequately address risks.
3. Sediment control basins may be necessary if cleanup does not prevent contaminant migration.
4. The report needs to better consider risks from consumption of contaminated animals.

Common Points Raised by Stakeholder Comments for Burial Grounds Operable Unit

1. Current characterization of the burial grounds is inadequate to allow capping to be used as the only remedy. Capping will not work because the burial grounds are not lined, and some parts of them are below the shallow water table.
2. Capping is being considered to reduce cost only.

Common Points Raised by Stakeholder Comments for Surface Soils Operable Unit

1. Addressing hot spots inside the fence using cleanup goals set at a target risk of E-04 for the industrial worker and PCBs at 25 ppm will not adequately address risks.

General Points Raised by Stakeholder Comments

1. Bioremediation needs to be considered for plume remediation.
2. Document contains some omissions and errors (e.g., the “P-Landfill” not discussed, figure legend incorrect).
3. A more detailed study of the CERCLA Cell, including alternative storage facilities, is appropriate.
4. Land use map (i.e. recreational use outside the fence) is inconsistent with McCracken County zoning.

**HAZARD AREA 1
GROUNDWATER OPERABLE UNIT**

Current Planned End State	Risk-Based End State
Access and excavation restrictions	Same
PGDP Water Policy	Enhanced institutional controls
Source reduction and removal (e.g., C-400 TCE) with monitored natural attenuation	Monitored natural attenuation
Excavate burial grounds (e.g., SWMU 4)	Cap burial grounds
Active contaminant reduction in dissolved phase plume with monitored natural attenuation	Monitored natural attenuation

- Risk after completion is the same for either scenario because exposure to contaminated groundwater is prevented.
- Enhanced institutional controls are more sustainable.
- RBES Takes Longer to Attain Maximum Contaminant Level (MCLs).
- Risks to remediation and site workers greater under the CPES because contact with contaminated materials is possible during source reduction and execution.
- Monitored natural attenuation required under both scenarios.
- Contaminants above MCLs would remain after TCE is removed as part of source reduction and removal actions.

**HAZARD AREA 2
SURFACE WATER OPERABLE UNIT**

Current Planned End State	Risk-Based End State
Access restrictions	Same
Environmental Monitoring	Same
Inside the fence soils and sediment excavation (residential scenario; 1E-06; PCBs at 1 ppm)	Inside the fence soils and sediment excavation (industrial scenario; 1E-04; PCBs at 25 ppm)
Outside the fence soils and sediment excavation (residential scenario; 1E-06; PCBs at 1 ppm)	Outside the fence soils and sediment excavation (recreational scenario; 1E-04; PCBs at 1 ppm)
Scrap removal	Same
Migration controls (sediment control basins)	Removal of "hot spots" in soil and sediment

- Risks differ but residual risks are within or below EPA risk range for site-related exposure (E-06 to E-04) under either scenario.
- RBES PCB cleanup levels consistent with Toxic Substance Control Act (TSCA) for industrial and recreational areas, as appropriate.
- Under RBES an ecological risk assessment will be conducted to demonstrate protectiveness (Comprehensive Site Operable Unit)

**HAZARD AREA 3
BURIAL GROUNDS OPERABLE UNIT (GROUP 1)**

Current Planned End State	Risk-Based End State
Access and excavation restrictions	Same
Excavate burial grounds	Cap burial grounds

**HAZARD AREA 6
BURIAL GROUNDS OPERABLE UNIT (GROUP 2)**

Current Planned End State	Risk-Based End State
Current land cover	Same
Access and excavation restrictions	Same
PGDP Water Policy	Enhanced institutional controls
Cap and monitor	Same

- Risk after completion is the same for either scenario because exposure to contaminated materials is prevented.
- Enhanced institutional controls are more sustainable.
- Risks to remediation and site workers greater under the CPES because contact with contaminated materials is possible during source reduction and execution.
- Under RBES (Group 1), no transportation risk because no offsite disposal.

**HAZARD AREA 4
SURFACE SOILS OPERABLE UNIT**

Current Planned End State	Risk-Based End State
Access and excavation restrictions Inside the fence soils and sediment excavation (residential scenario; 1E-06; PCBs at 1 ppm)	Same Inside the fence soils and sediment excavation (industrial scenario; 1E-04; PCBs at 25 ppm)

- Risks differ but residual risks are within or below EPA risk range for site-related exposure (E-06 to E-04) under either scenario.
- RBES PCB cleanup levels consistent with Toxic Substance Control Act (TSCA) for industrial areas.

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COMMENTS FROM THE PGDP RBES PUBLIC WORKSHOP
February 26, 2004

The following are comments made at the PGDP RBES Public Workshop that were recorded by Richard Bonczek, the primary author of the PGDP RBES Vision and Variance Report. These comments and other questions were discussed during the workshop and, in some instances, the RBES Vision and Variance Report was modified in response to these comments. Even though changes to the report were not appropriate or necessary for some comments, all comments received during the workshop are included in this summary to ensure that these comments are available for current and future consideration. An audio recording of the workshop is available by contacting Greg Cook of the BJC Public Affairs office.

- 1) Charlie Quinton - Is the USGS¹ involved in the preparation of the document? They may have data that would be useful (i.e., seismic information).
- 2) KYDEP² – The state will have comments on the PGDP RBES. Their comments are in review right now and should show up soon.
- 3) KDFWR³ – Current enhanced institutional control discussion needs to be reviewed and improved.
- 4) KDFWR – Are the enhanced institutional controls proposed consistent with future use of some areas as wetland habitat?
- 5) Bill Tanner – Will the enhanced institutional controls result in moving the current PGDP Water Policy box? Will the west boundary of the box be moved closer to the PGDP and the east boundary be moved further from the PGDP?
- 6) KDFWR – Ecological risk discussions need to be added to the document.
- 7) KDFWR – It is not clear how DOE can clean to ecological standards when an ecological risk assessment has not been performed.
- 8) Bill Tanner – The uncertainty in the future water balance at the site due to enrichment plant shutdown needs to be discussed.
- 9) Vicki Jurka – It is possible that the concentration of TCE⁴ in groundwater will go up in the future when the enrichment plant shuts down. This needs to be discussed.
- 10) Vicki Jurka – The document needs to consider how future industrial releases from other (new) processes may affect DNAPL⁵ releases in the future. This interaction may limit future use of the site.
- 11) Bill Tanner – The guidance used to prepare the current draft of the document differs from that discussed with the CAB⁶ in September 2003. This change in guidance should have been more widely discussed.
- 12) Vicki Jurka – Changes in the state of materials disposed of in the landfill as they age needs to be discussed. Will the migration potential of these materials change over time? (Bill Tanner also asked second question.)
- 13) KYDEP – Generally, the current planned end state presented in the report is inconsistent with the state’s current cleanup plan. Specifically, the state’s cleanup goal for PCBs in sediment is 0.1 ppm and not 1 ppm as presented in the report. The 0.1 ppm value is taken from the Rockwell court case decision.

¹ USGS = United States Geological Survey

² KYDEP = Comment made by representative from the Commonwealth of Kentucky Department of Environmental Protection

³ KDFWR = Comment made by representative from the Commonwealth of Kentucky Department of Fish and Wildlife Resources.

⁴ TCE = Trichloroethene; the primary groundwater contaminant at the PGDP.

⁵ DNAPL = Dense non-aqueous phase liquids; TCE is a DNAPL.

⁶ CAB = PGDP Citizens’ Advisory Board

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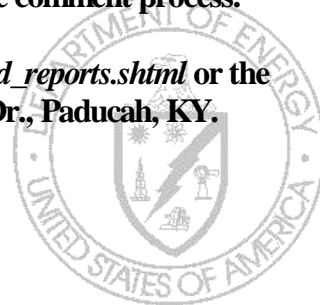
**U.S. Department of Energy
RISK-BASED END STATE
PUBLIC WORKSHOP**

DOE will host a second public workshop Thursday, March 11, 2004 at 7:00 p.m. to discuss the Draft Risk-Based End State Vision document for the Paducah Gaseous Diffusion Plant. The document is an analytical tool to assure environmental cleanup efforts are consistent with the site's future use planning. The workshop is an opportunity to discuss details of the document and provide an exchange of information to aid in the comment process.

The draft is available at www.bechteljacobs.com/pad_reports.shtml or the Environmental Information Center, 115 Memorial Dr., Paducah, KY.

For more information, call (270) 441-6819.

7:00 p.m. - Thursday, March 11, 2004
Environmental Information Center
115 Memorial Drive, Paducah, KY



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Public Participation Summary

- CAB presentation – January 15
- Draft document completed – January 31
- Placed in EIC - February 2
- Posted document to Web site - February 3
- Public Meeting – February 5
- CAB discussion at board meeting – February 19
- First Stakeholder Workshop – February 26
- Radio Call-In Show – March 1
- Second Stakeholder Workshop – March 11
- CAB discussion at board meeting – March 18
- Comments by March 18 will be included in the March 30 submission to HQ
- Comments after March 18 will be forwarded to HQ

Current Status

- Received DOE HQ comments – March 5
- Discussed comments with HQ – March 9
- Initiated document revision – March 10
- Revised document due to HQ – March 30

Anticipated Document Revision

1. Add public participation appendix
2. Add additional schedule and cost information
3. Incorporate various editorial changes
4. Add discussion clarifying enhanced institutional controls
5. Discuss the chance that actions like capping landfills -- used to achieve the CPES and the RBES -- might fail
6. Add discussion of plume migration, including projected contaminant reduction over time and effect of potential changes in water balance on future plume state

Anticipated Document Revision (cont'd.)

- Add discussion of seismic factors affecting permitted landfills
- Expand ecological risk discussions for hazard areas
- Increase discussion of radiological risk
- Clarify options for D&D for PGDP
- Enhance recommendations in the variance table

Examples of Changes to Recommendations

Enhanced Institutional Controls

Original RBES:

- “Initiate further discussions with the public and regulators.”

Expected changes:

- Initiate further discussion with the public:
 - to determine acceptability of acquisition of property rights ranging from permanent restrictions to property purchase.
- Initiate further discussion with regulators:
 - to discuss willingness to consider enhanced institutional controls in conjunction with monitored natural attenuation in lieu of source and plume actions.
 - to discuss willingness to consider establishing points of compliance and exposure at the property boundary based on enhanced institutional controls and monitoring.

Examples of Changes to Recommendations

Enhanced Institutional Controls (cont'd.)

- Revisit DOE policy concerning acquisition of property rights (ranging from property easements and use restrictions to property purchase).

Examples of Changes to Recommendations

Risk Scenarios

Original RBES:

- “Initiate further discussions with the public and regulators.”

Expected changes:

- Initiate further discussion with regulators:
 - to seek agreement that cleanup standards for proposed actions will be set based upon current and future land use for the area in question.
 - to gain agreement that cleanup standards for proposed actions will be set based on CERCLA risk range (10^{-6} to 10^{-4})

Examples of Changes to Recommendations

PCBs

Original RBES:

- “Initiate further discussions with the public and regulators.”

Expected changes:

- Initiate discussion with regulators to seek agreement that national TSCA cleanup standards for low occupancy (e.g., industrial), areas (25 ppm) should be adopted for industrial areas and that national TSCA standards for high occupancy (e.g., residential) areas (1 ppm) should be adopted for recreational areas.

Path Forward/Schedule

- Continue to collect additional public comments
- Continue document revision and review
- Document delivered to DOE HQ – March 30

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COMMENTS FROM THE PGDP RBES PUBLIC WORKSHOP
March 11, 2004

The following are comments made at the PGDP RBES Public Workshop that were recorded by Richard Bonczek, the primary author of the PGDP RBES Vision and Variance Report. These comments and other questions were discussed during the workshop and, in some instances, the RBES Vision and Variance Report was modified in response to these comments. Even though changes to the report were not appropriate or necessary for some comments, all comments received during the workshop are included in this summary to ensure that these comments are available for current and future consideration. An audio recording of the workshop is available by contacting Greg Cook of the BJC Public Affairs office.

- 1) Bill Tanner (and others) – Stated that DOE needs to provide a more comprehensive path forward for what will occur after the final RBES is delivered on March 30, 2004.
- 2) Bill Tanner – Questioned if the public participation appendix being prepared for the revised RBES will be available at the March 18, 2004 CAB¹ meeting.
- 3) Vicky Jurka – Questioned how DOE can justify purchasing property as part of enhanced institutional controls if property is not contaminated. If property is purchased, then all property owners need to be treated equally.
- 4) Ruby English – Questioned how DOE would compensate property owners if deed restrictions become part of the enhanced institutional controls. Recommended that DOE hold a series of meetings explaining the reason for and methods to be used to implement institutional controls.
- 5) Vicky Jurka – Stated that the CAB has produced and distributed letter asking property owners about their feelings concerning property purchase.
- 6) Bill Tanner – Stated that the CAB started working on recommendations concerning property purchase 2 years ago. CAB will revisit again soon and would like to see final resolution of issue within 2 years.
- 7) Vicky Jurka – Stated that other DOE locations have used an entity like PACRO² when purchasing property.
- 8) Vicky Jurka – Reiterated her belief that the RBES process is being used to avoid real clean-up. Also, noted that if groundwater sources are not cleaned up, then the McNairy Formation will be impacted. (Concerns about the McNairy Formation and contamination were also voiced by John Turner.)
- 9) John Anderson – Requested that DOE provide information regarding property purchase at other DOE facilities.
- 10) KDFWR³ – Requested that the discussion of ecological risk in the RBES include ecological cleanup levels.
- 11) John Tanner – Stated that the CAB will be providing a series of end state recommendations at next week's CAB meeting.
- 12) John Anderson (PACRO) – Provided a memorandum entitled "Paducah End State Vision" and led discussion of this memorandum.
- 13) Vicki Jurka – Would like to see additional discussion of risks at C-746-U Landfill in the RBES. Concerned that DOE is concentrating waste streams by using the landfill.
- 14) Ruby English – Stated that the report needs more information about the contaminant plumes and their migration.
- 15) KDFWR – Stated (with agreement with others) that DOE's presentation of the RBES process and the document contents needs to be simpler. DOE used too much jargon in the presentation.

¹ CAB – Citizen's Advisory Board

² PACRO – Paducah Area Community Reuse Organization

³ KDFWR – Kentucky Department of Fish and Wildlife Resources

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Attachment 7

CAB END STATE VISION FOR THE PADUCAH GASEOUS DIFFUSION PLANT

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PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

111 Memorial Drive • Paducah, Kentucky 42001 • (270) 554-3004 • PaducahCAB@bellsouth.net • www.oakridge.doe.gov/pgdpssab

Chair

March 30, 2004

Bill Tanner

Vice-Chair

Linda Long

Board Members

Richard Dyer

Byron M. Forbus

Fred Jones

Vicki Jones

Chad Kerley

Ricky Ladd

Rebecca Lambert

Bobby Lee

Rhonda McCorry

Douglas L. Raper

John Russell, Ph.D.

Jim Smart, Ph.D.

Dorothy Starr

Mr. William E. Murphie
U.S. Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive
Suite 200
Lexington, KY 40513

Subject: Paducah Gaseous Diffusion Plant (PGDP) Citizens Advisory Board (CAB) Consensus Recommendation 04-07

Dear Mr. Murphie:

On behalf of the PGDP CAB, I am pleased to forward you the following recommendation adopted by consensus at the March 18, 2004 Board meeting:

Recommendation 04-07, which states the CAB's End State Vision for the PGDP.

Deputy Designated Federal Official

William Murphie, DOE
Ex-officio member

The recommendation contains 12 different items we believe are crucial to the development of an end state vision that protects human health and the environment, while preparing for a viable economic future for the Paducah site.

Ex Officio Members

Wayne Davis
Fish and Wildlife Resources
(Kentucky)

Based on the significance of this issue to the entire community, we request very detailed responses to our concerns addressed in the enclosed recommendation. The Paducah CAB has invested considerable amounts of time developing this recommendation and expects the Department of Energy's (DOE's) response to reflect that level of effort so that we may clearly understand how each of the items will be incorporated into DOE's actions.

Eric Scott
Radiation/Environmental
Monitoring Section
(Kentucky)

Recognizing that DOE requires sufficient time to respond accordingly, the Paducah CAB respectfully requests a response by October 1, 2004, at the beginning of Fiscal Year 2005. If you have any questions or require further information, please contact me at (270-442-3337) or the Board office (270-554-3004).

Tuss Taylor
Division of Waste Management
(Kentucky)

Sincerely,

Bill Tanner
Chair

David Williams
Environmental Protection
Agency

DOE Federal Coordinator

David Dollins

BT:kp
LTR-PAD/CAB-LL-04-0027

Enclosure: Recommendation 04-07

Additional information about contacting board members directly can be obtained from the CAB web site or by contacting the board at (270) 554-3004.

Distribution:

c: J. Anderson, PACRO
G. Bazzell, DOE-PAD
J. Bierer, Fernald CAB
J. Brannon, NNM CAB
Senator Jim Bunning
W. L. Davis, KDFW/Frankfort
D. W. Dollins, DOE-PAD
Senator Richard Durbin
R. English, ACT
Senator Peter Fitzgerald
P. Foley, PACE
T. C. Freeman, Bunning Field Representative
R. D. George, BJC/Kevil
Representative Charles Geveden
V. Holm, Rocky Flats CAB
S. Kay, Roberts and Kay/Lexington
P. L. Link, BJC/Kevil
Senator Bob Leeper
Senator Mitch McConnell
T. Martin, Hanford Advisory Board
D. Mast, Whitfield Field Representative
D. Mosby, ORSSAB
McCracken County Judge Executive Danny Orazine
Mayor Bill Paxton
PGDP CAB Members
C. Phillips, NTS CAB
Representative Frank Rashe
E. Scott, RCB/Frankfort
Congressman John Shimkus
E. Spalding, Paducah Chamber of Commerce
T. Taylor, KDWM/Frankfort
J. Thomas, Ballard Chamber of Commerce
T. Thomas, McConnell Field Representative
G. E. VanSickle, BJC/Kevil
S. Waisley, DOE-HQ
W. Waters, SRS CAB
Congressman Ed Whitfield
D. Williams, EPA/Atlanta
P. W. Willison, BJC/Oak Ridge
M. Wilson, INEEL CAB
File-EMEF-DMC-PAD-RC



PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

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Deputy Designated Federal Official

William Murphie, DOE
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Radiation/Environmental
Monitoring Section
(Kentucky)

Tuss Taylor
Division of Waste Management
(Kentucky)

David Williams
Environmental Protection
Agency

DOE Federal Coordinator

David Dollins

*Additional information
about contacting board
members directly can be
obtained from the CAB
web site or by contacting
the board at
(270) 554-3004.*

Consensus Recommendation: 04-07

Title: End State Vision for the Paducah Gaseous Diffusion Plant Site

Background:

In November 2002, the Paducah Gaseous Diffusion Plant (PGDP) Citizens Advisory Board (CAB) requested that the U.S. Department of Energy (DOE) provide a list of topics for the CAB to work from in developing recommendations. In DOE's response, the CAB was asked to focus on long term stewardship, specifically the CAB's End State Vision for the PGDP site.

In June 2003, the Long-Range Strategy/Stewardship task force began the process of obtaining input from the community for an End State Vision. The first meeting was attended by representatives of the CAB, DOE, the Kentucky Department of Waste Management, the West Kentucky Wildlife Management Area (WKWMA), the Greater Paducah Economic Development Council (GPEDC), the Paducah Area Community Reuse Organization (PACRO), Active Citizens for Truth (ACT), and the Coalition for Health Concerns. Also present were the McCracken Judge Executive, the Mayor of Paducah, the Paducah City Manager, and members of the public. In more recent meetings, the Board has also discussed this recommendation with the McCracken County Administrator.

Following development of the End State recommendation in draft form, presentations were made to various groups and organizations to obtain comments and suggestions on specific points contained within the recommendation. This information was presented to the PACRO Finance and Executive Committee, the Ballard County Chamber of Commerce, the Paducah Chamber of Commerce, ACT, and to the Paper, Allied-Industrial, Chemical, and Energy Workers Local 5-550. Comments received from these meetings that were applicable have been incorporated into this recommendation. Throughout the eight-month process, the CAB's objective has been to include and represent the community in this matter.

Current Status:

To develop an End State Vision, certain facts concerning the current situation of the PGDP site must be considered. The United States Enrichment Corporation (USEC) leases the uranium enrichment facilities from DOE. While USEC has announced plans to build and operate a centrifuge facility in Ohio, replacing the older Paducah operation, there remains a possibility that use of the Paducah site could continue beyond 2010. Additionally, DOE has yet to announce if the Paducah site will transition immediately into Decontamination and Decommissioning (D&D) upon USEC's departure from the site, or if the site will be placed on standby while determining national energy needs.

Another event, redefining Paducah's future, is the construction of a Depleted Uranium Hexafluoride (DUF₆) Conversion Facility. Operation is scheduled to continue until 2030 or beyond and is viewed by the CAB as the first step in reindustrialization of the Paducah site. The progress by DOE in areas such as the North-South Diversion Ditch, the DUF₆ Conversion Facility, Six-Phase Heating Technology, Scrap Metal Removal, and the characterization and disposition of the DOE Material Storage Areas is considered a major step forward in developing a safe, reusable site.

The uncertainty of the future of the gaseous diffusion process coupled with reindustrialization (DUF₆), which has already begun, do in fact help define the End State Vision of this CAB. It is, however, the belief of this CAB that decisions made today regarding the end state of the PGDP will provide guidance for future generations as they implement and update this End State Vision.

Concern:

As the CAB worked toward its End State Vision, three items emerged as primary concerns:

- Environmental remediation as currently planned may not be sufficient to fully protect human health and the environment in the future without the possibility of reoccurring issues.
- Environmental remediation as currently planned may not be sufficient to allow the Paducah community every opportunity in reindustrializing the site, and thereby protecting and building upon the economic impact this site has on the region.
- If this community waited until USEC ceased operations and environmental remediation was completed before acting on its end state vision, many years that could have been productively used for reindustrialization planning and development would be lost.

Goal:

The three concerns stated above share a common and single solution; the level of environmental remediation must be sufficient to allow this community control of its future. Therefore, the goal of the Paducah CAB's End State Vision is as follows:

To protect human health and the environment while preparing for a viable economic future for the Paducah site.

Recommendation:

To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:

- 1. DOE is encouraged to structure environmental remediation activities to allow continued nuclear and non-nuclear industrial use of the existing industrialized area and to continue recreation/wildlife use of those areas presently leased to the WKWMA.**
- 2. DOE begin investigating means to modify security access to non-USEC leased areas, allowing the reindustrialization process to move forward.**
- 3. DOE begin consultation with PACRO, GPEDC, and other involved parties to inventory and investigate buildings and facilities to determine potential reindustrialization value.**
- 4. DOE decontaminate the buildings, facilities, and surrounding grounds (scheduled for reuse) to the level necessary to allow this community every opportunity to obtain non-nuclear tenants for the site.**
- 5. DOE begin physical rehabilitation of infrastructure facilities identified as having potential for the reindustrialization process.**
- 6. DOE thoroughly characterize any contamination remaining at the site and adjoining property, after all environmental remediation activities are complete. This will allow the issuance of state**

and federal “covenant not to sue”, or an equivalent document, for future tenants and property owners.

7. DOE should investigate all possible alternatives to the proposed Comprehensive Environmental Recovery, Compensation, and Liability Act (CERCLA) waste disposal facility. There are four gaseous diffusion process buildings that have little, if any, potential for reindustrialization. The footprints of these buildings could be used for an above-ground concrete encapsulation of final D&D waste. This option is more acceptable to the community and may lower long-term costs for both Environmental Management (EM) and Legacy Management (LM).
8. DOE plan and initiate removal of all burial grounds within the industrial area. The potential for contaminant migration in the air, soil, groundwater and surface water is greatly increased if the burial grounds remain. The unexcavated burial grounds will negatively impact future industrial options for the site.
9. DOE, within two years, resolve the issue of institutional controls, compensation, or “buy out” with the property owners affected by off-site groundwater contamination.
10. DOE begin a public information/involvement process as soon as possible to educate the community on the transition from the Office of EM to the Office of LM, specifically addressing issues such as, but not limited to, long-term taxpayer costs (is the best financial decision for EM also the best financial decision for taxpayers throughout LM activities) LM monitoring of the site, and, if necessary, responding to new or migrating contaminants.
11. DOE remove sources and potential sources of off-site groundwater contamination.
12. DOE is encouraged to begin immediately working with the local communities to explore possibilities which address the three concerns listed above. The CAB offers the following as a means to begin achieving the common goal of this community:
 - Provide on-site facilities for environmental remediation/innovative technology companies.
 - Provide on-site facilities for the research being performed by the University of Kentucky for neptunium removal from nickel and use of converted depleted uranium. Upon success of this research, provide the necessary production facilities.
 - Explore the potential for the on-site development of Hazardous Material and Emergency Response Training facilities.
 - Explore the possibility of establishing an energy research technology park at the site.

Approved by Consensus March 18, 2004

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Attachment 8

QUESTIONS FROM CAB BGOU TASK FORCE ON RBES AND RESPONSE

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From: Morgan, John Wesley (J31) [morganjw@bechteljacobs.org]
Sent: Wednesday, May 12, 2004 9:31 AM
To: Payne, Kendra Lillian (KP6)
Cc: Link, Patricia Lynn (LL1); Cook, Gregory N (7GC)
Subject: FW: RBES/BGOU questions for the CAB



Response to CAB
Waste Task For...

Kendra

Attached in the file below is a response to the BGOU Task Force question regarding the RBES.

John

> -----Original Message-----

> From: Payne, Kendra Lillian (KP6)
> Sent: Friday, April 30, 2004 10:17 AM
> To: Morgan, John Wesley (J31)
> Subject: RBES/BGOU questions for the CAB

>
> The Waste task force is seeking clarification on the BGOU as it related to
> RBES. The outstanding question they have is why is the BGOU split into
> two groups in the RBES document. Group 1 includes SWMUs 3, 6 and 145.
> The current end state is to excavate and the RBES is to cap. Group 2
> includes SWMUs 5, 7, 8, and 30 and states the current end state is
> continuation of Water Policy and the RBES is institutional controls. It
> appears that group 2 is tied in with groundwater, however, SWMUs 2 and 4
> under RBES are not included in the BGOU but the GWOU. Also, there is no
> mention in RBES of the excavation/capping plans for the SWMUs in group 2.
> Naturally, this information has confused the task force members. Any
> clarification you could provide would be helpful. Thanks, Kendra

>
> Kendra L. Payne
> Citizens Advisory Board Support
> SAIC
> 761 Veterans Avenue
> Kevil, KY 42053
> kp6@bechteljacobs.org
> 270-441-5204

>
<<Response to CAB Waste Task Force Comment.doc>>

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Response to CAB Waste Task Force Comment

The units in the BGOU are in three hazard areas. These units and their RBES and CPES (from Table 5.1 of the D2R2 RBES Report) are as follows:

Hazard Area 1 - GWOU: This hazard area includes burial grounds with considerable uncertainty regarding their contribution to groundwater contamination. Included are SWMU 2 (C-749 Uranium Burial Ground) and SWMU 4 (C-747 Contaminated Burial Ground). (Please see pp. 4-4 and 4-5 of the D2R2 RBES Report.)

Current Planned End State	RBES
<i>Hazard Area 1: GWOU</i>	
Access and excavation restrictions.	Same.
PGDP Water Policy.	Enhanced institutional controls.
Source removal (i.e., excavation) at burial grounds with monitored natural attenuation.	Cap burial grounds with monitored natural attenuation.

Hazard Area 3 - BGOU (Group 1): This hazard area includes burial grounds not believed to be a source of groundwater contamination but for which the RBES and CPES differ. Included are SWMU 3 (C-404 Low-level Radioactive Waste Burial Ground), SWMU 6 (C-747-B Burial Ground), and SWMU 145 (Residential/ Inert Landfill Borrow Area (and old NSDD channel). (Please see p. 4-19 of the D2R2 RBES Report.)

Current Planned End State	RBES
<i>Hazard Area 3: BGOU (Group 1)</i>	
Access and excavation restrictions.	Same.
Excavate burial grounds.	Cap burial grounds.

Hazard Area 6 - BGOU (Group 2): This hazard area includes burial grounds not believed to be a source of groundwater contamination but for which the RBES and CPES do not differ. Burial grounds included are SWMU 5 (C-746-F Burial Ground); SWMU 7 (C-747-A Burial Ground); SWMU 8 (C-746-K Landfill); and SWMU 30 (C-747-A Burn Area). (Please see pp. 4-27 and 4-28 of the D2R2 RBES Report.)

Current Planned End State	RBES
<i>Hazard Area 6: BGOU (Group 2)</i>	
Maintain current land cover.	Same.
Access and excavation restrictions.	Same.
PGDP Water Policy.	Enhanced institutional controls.
Landfill cap.	Same.
Monitoring.	Same.

Discussion: For all hazard areas, the RBES, as presented in the D2R2 Report for the burial grounds includes capping and access restrictions. In addition, for the Hazard Areas 1 and 6 burial grounds (i.e., SWMUs 2, 4, 5, 7, 8, and 30), the RBES includes enhanced institutional controls and monitoring. For SWMUs 2 and 4, enhanced institutional controls and monitoring (i.e., monitored natural attenuation) are included in the RBES due to the uncertainty in the contribution of these units to groundwater contamination. For SWMUs 5, 7, 8, and 30, enhanced institutional controls and monitoring are included in the RBES because there is disagreement between DOE and the regulatory agencies concerning the potential for contaminants to migrate from these units.

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Attachment 9

MAY 11, 2004, PRESENTATION TO PADUCAH CHAMBER OF COMMERCE

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*Risk-based End State Vision
for the
Paducah Gaseous Diffusion
Plant*

*Paducah Chamber of Commerce
Community Business and
Development Committee*

May 11, 2004



RBES PROCESS

- Evaluation to identify alternate cleanup approaches to address site risks as opposed to the assumed actions in the current baseline.
- Recognizes site risks can be mitigated using various approaches, including:
 - Source removal (e.g., excavation); and
 - Taking action to prevent receptors from coming into contact with contaminants and to prevent migration of contaminants (e.g., deed restrictions, capping landfills, etc.).
- RBES process emphasizes that cleanup levels need to be consistent with current and reasonably foreseeable future land use.

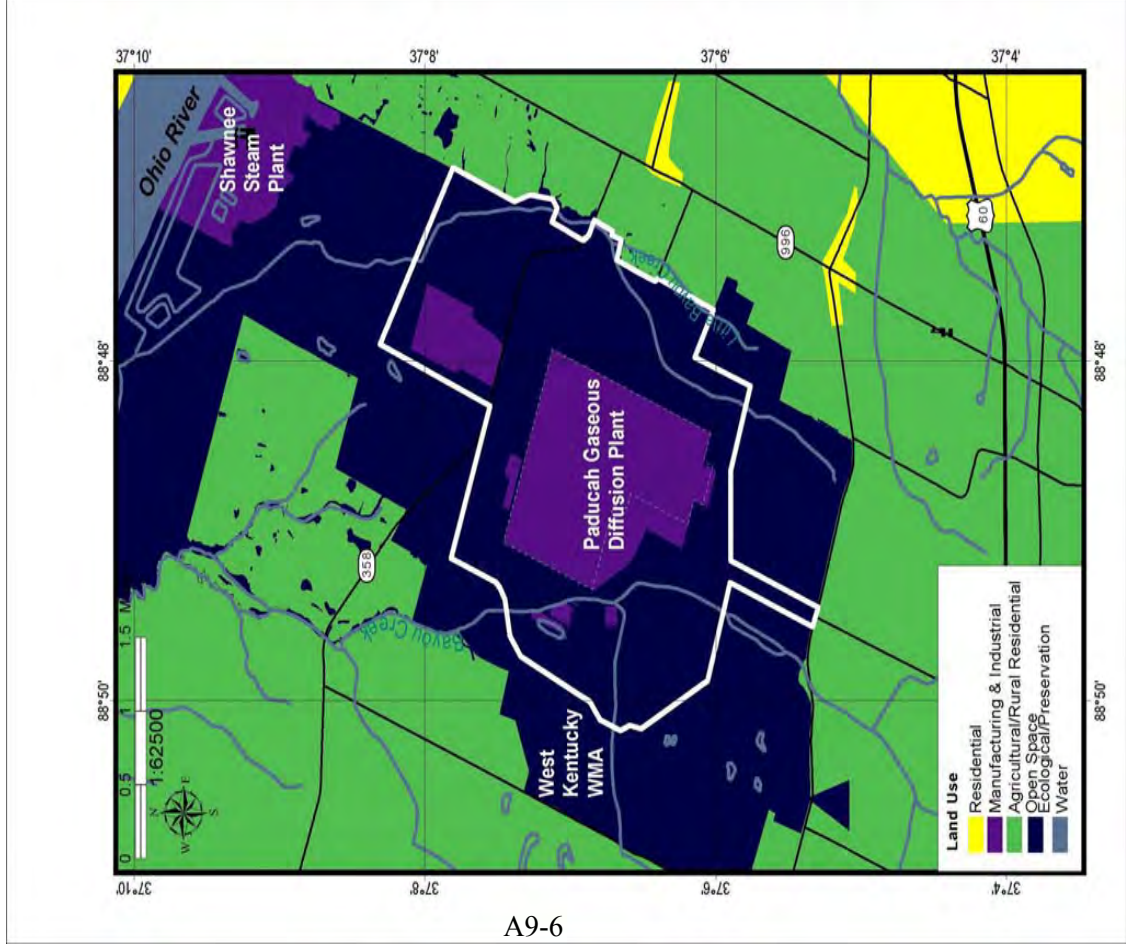


*The RBES Vision Document is not
a decision document.*

Current and Reasonably Foreseeable Future Land Use

Summary

- Under the RBES, future use same as current use.
- Continued manufacturing and industrial use inside fence.
- Wildlife management and recreational use of other DOE-owned property.
- Agricultural and rural residential use of surrounding area.





Risk Balancing

- Individuals and wildlife can be put at risk both by contamination in the environment and by attempts to clean up the contamination.
- More intrusive cleanup methods (e.g., excavation and disposal) may be more permanent (because they remove the contaminants), but can result in greater near-term risks to workers, the public, and the environment during implementation.



Document Development

- Divided the site into nine "hazard areas."
- Identified differences between currently planned approaches and alternate cleanup approaches under the RBES (variance identification).
- Examples of the more significant variances:
 - Types of Institutional Controls (e.g., water policy vs. deed restrictions or property purchase)
 - Burial Ground Actions (e.g., excavation vs. capping)
 - Groundwater Actions (e.g., removal of all sources vs. major sources)
 - Soils Cleanup Levels (clean industrial areas to residential levels vs. clean industrial areas to industrial levels)



DOE's Use of Report

- The RBES Vision report is not a decision document.
- Consider variances and determine if changes should be sought to address national and/or site specific considerations.
 - There may be no changes.
 - Any changes to current plans would be made in accordance with all applicable requirements and procedures, including public participation and regulatory approval.



Stakeholder Involvement - Future

- DOE is planning to seek meetings with area groups, including:
 - Paducah Chamber of Commerce
 - Active Citizens for Truth
 - Ballard County Chamber of Commerce
 - McCracken County and Paducah representatives
 - CAB Update
 - Purchase Area Community Reuse Organization
- Next public meeting scheduled for 6/3.



Document Status

- Report follows guidance available at www.em.doe.gov/office.html (see “Hot Topics.”)
- Two draft documents released so far:
 - 1st draft issued January 31, 2004.
 - 2nd revised draft issued April 30, 2004.
- Final draft document to be issued by September 1, 2004.

A9-11



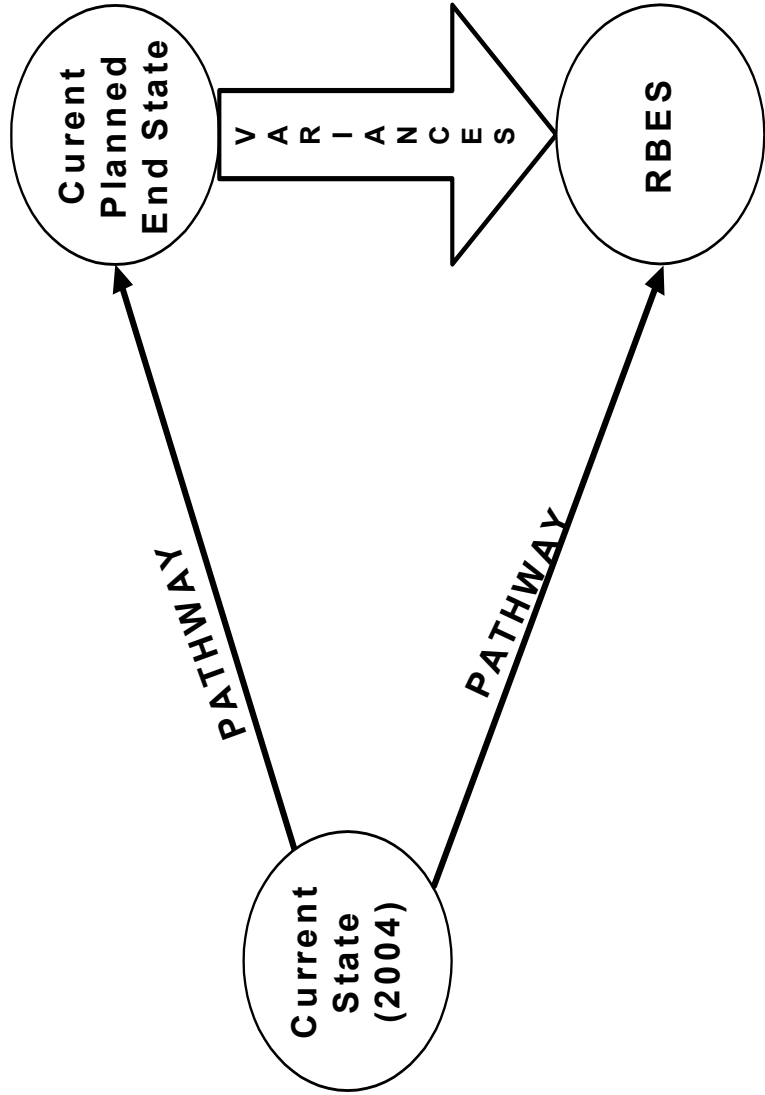
BACKUP SLIDES

A9-12



RBES Process

ANALYTICAL TOOL





Comparison of Actions to Attain RBES and CPES

RBES Actions	CPES Actions
Continued access and use controls, including enhanced controls limiting groundwater use.	Continued access and use controls, including continuation of Water Policy.
Reduce solvent concentration at main source (i.e., C-400) using treatment. Address remaining groundwater contamination with natural attenuation.	Reduce solvent concentration at multiple sources (e.g., C-400, C-720, SWMU 1) using treatment. Address remaining groundwater contamination with oxidation of dissolved plume and natural attenuation.
Cap all burial grounds. Continue monitoring and access controls.	Excavate some burial grounds and cap others. Continue monitoring and access controls.
Excavate contaminated sediments and soil to attain cleanup levels consistent with future industrial and recreational use. Continue access controls	Excavate contaminated sediments and soil to attain cleanup levels consistent with future residential use.
Characterization and on- and off-site disposal of legacy waste.	Same.
D&D of facilities and infrastructure followed by on- and off-site disposal of debris.	Same.



Stakeholder Involvement - Past

- DOE guidance requires stakeholder involvement.
 - Current report includes changes due to stakeholder input.
- Public activities to date include:
 - Briefings to Citizens Advisory Board.
 - Participation in radio program.
 - Two public workshops.
 - Receipt of oral and public comments.



Examples of Changes Made in Response to Stakeholder Comments

- Additional time added to schedule to allow for increased public participation.
- Stakeholder participation appendix added to report.
- Discussion of “enhanced institutional controls” expanded.
- Relationship between Water Policy and “enhanced institutional controls” clarified.
- Source action for solvents at C-400 added.
- Discussion of range of actions under D&D added, including note about possible reindustrialization of some facilities.
- Discussion of variances and recommendations on ways to resolve variances increased.

A9-16

VARIANCE EXAMPLES

PGDP WATER POLICY	ENHANCED INSTITUTIONAL CONTROLS
Implemented in 1994.	No implementation to date. Action subject to CERCLA decision.
Prevent exposure by providing an alternate water source.	Prevent exposure through one or more actions: <ul style="list-style-type: none"> -Alternate water source with legal agreements limiting groundwater use (e.g., deed restrictions). -Property purchase.
Enforced through 5-year lease agreements. Relies on cooperation of affected residences and businesses.	Enforce through long-term legal agreements offering greater sustainability in risk mitigation than the Water Policy.





VARIANCE EXAMPLES

GROUNDWATER	
CURRENT PLANNED END STATE	RBES
Access and excavation restrictions.	Same.
PGDP Water Policy.	Enhanced institutional controls.
Source treatment at all primary and secondary DNAPL source areas with monitored natural attenuation.	Source treatment at just the primary DNAPL source areas (e.g., C-400) with monitored natural attenuation.
Active contaminant reduction (e.g., oxidation) in the dissolved- phase plumes with monitored natural attenuation.	Monitored natural attenuation.
Natural attenuation of contaminants discharged to surface water at seeps on Little Bayou Creek.	Same.



VARIANCE EXAMPLES

BURIAL GROUNDS	
CURRENT PLANNED END STATE	RBES
Access and excavation restrictions.	Same.
PGDP Water Policy.	Enhanced institutional controls.
Excavate certain burial grounds.	Cap all burial grounds.

A9-19

SURFACE SOILS	
CURRENT PLANNED END STATE	RBES
Access and excavation restrictions.	Same.
Complete excavation of soil source areas; target risk based on residential risk of 1E-06, PCBs at 1 ppm.	Excavation of "hot spots" in soil; target risk based on worker risk of 1E-04, PCBs at 25 ppm.

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Attachment 10

LETTER SENT TO COMMUNITY GROUPS AND SUBSEQUENT PRESENTATION MATERIALS

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Department of Energy

Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, Kentucky 40513
(859) 219-4000

June 1, 2004

PPPO-01-558-04

Elaine Spalding
President
Paducah Area Chamber of Commerce
P.O. Box 810
Paducah, KY 42003-0810

Dear Ms. Spalding:

STAKEHOLDER INPUT FOR PADUCAH GASEOUS DIFFUSION PLANT RISK BASED END STATE VISION DOCUMENT

The purpose of this letter is to inquire as to your organization's interest in meeting with the Department of Energy (DOE) to discuss the Risk Based End State (RBES) vision document that is being prepared for the Paducah Gaseous Diffusion Plant (PGDP). DOE is developing this document as part of a national initiative for various DOE sites that are undergoing cleanup across the country. The RBES document will be used as an analytical tool for assessing current cleanup plans for the PGDP facility, identifying appropriate and protective future use and risk scenarios, determining whether the current cleanup plans are based on appropriate and protective future use and risk scenarios, and identifying any changes in the current cleanup plans that the Department might wish to pursue in accordance with applicable legal requirements.

DOE already has issued two drafts of the RBES document for the PGDP facility, and has conducted several public meetings to discuss the document and seek stakeholder input. DOE is seeking to expand the opportunity for stakeholder interaction and input by offering to come discuss the RBES process and the PGDP document with various community organizations.

The deadline for submitting a final draft RBES document for the PGDP facility to DOE Headquarters is September 1, 2004. To facilitate our ability to meet this deadline, we would like to meet with your organization some time in June or July. If you would like to meet with DOE to discuss the document, please contact Laura Schachter of my staff at (859) 219-4010, to set up a time for me or a member of my staff to come meet with your organization.

Sincerely,

William E. Murphie
Manager
Portsmouth/Paducah Project Office

Addresses of Paducah Area Community Groups

Elaine Spalding
President
Paducah Area Chamber of Commerce
P.O. Box 810
Paducah, KY 42003-0810

Julie Thomas
Executive Director
Ballard County Chamber of Commerce
135 N. Fourth Street
Wickliffe, KY 42087

John Anderson
Executive Director
Paducah Area Community Reuse Organization
2000 McCracken Blvd.
Paducah, KY 42001

Ken Wheeler, Chairman
Greater Paducah Economic Development
Council
333 Broadway, Suite 603 - P.O. Box 1155
Paducah, KY 42002-1155

Dr. Richard A. Schmidt
Director
Kentucky Consortium for Energy and the
Environment
P.O. Box 7380
Paducah, KY 42002

Teresa Harris
Executive Officer
Paducah Board of Realtors
1333 Kentucky Avenue
Paducah, KY 42003

Farrell Beyer
Associated General Contractors
2201 McCracken Blvd.
Paducah, KY 42001

Danny Orazine
McCracken County Judge Executive
McCracken County Courthouse
301 South 6th Street
Paducah, KY 42003

Bob Buchanan
Ballard County Judge Executive
Ballard County Courthouse
P.O. Box 276
Wickliffe, KY 42087

William F. Paxton
Mayor
City of Paducah
P.O. Box 2267
Paducah, KY 42002

Charles Burnley
Mayor
City of Kevil
P.O. Box 83
Kevil, KY 42053

Beth Clanahan
Mayor
City of Metropolis
106 W. 5th Street
Metropolis, IL 62960

Ruby English
Chairman
Active Citizens for Truth
6715 Metropolis Lake Road
West Paducah, KY 42086

Corrine Whitehead
President
Coalition for Health Concerns
1091 U.S. Hwy. 641
Benton, KY 42025

Kristi Hanson/Mark Donham
Regional Association of Concerned
Environmentalists
Route 1, Box 308
Brookport, IL 62910

Vickie C. Ladt
President
Rotary Club of Paducah
P.O. Box 398
Paducah, Kentucky 42002-0398

Don Knowles
Paducah Lions Club
P.O. Box, 7201
Paducah, KY 42002-7201

J.W. Cleary
President
NAACP, Paducah-McCracken County Branch
P.O. Box 357
Paducah, KY 42002-0357

Phillip Foley, President
Paper, Allied-Industrial, Chemical and Energy
Workers
International Union, Local 5-650
2525 Cairo Road
Paducah, KY 42001

Jay Stoll, President
Security Police Fire Professionals of America
1410 Hobbs Road, MS-2001
Paducah, KY 42001



*Status of the Risk-Based
End State Vision Process
for the
Paducah Gaseous Diffusion
Plant*

*Presentation to Greater Paducah Economic
Development Council and Paducah Area
Chamber of Commerce*

July 15, 2004



RBES Process

- Identifies risk-based cleanup approaches to address site contamination
- Compares the risk-based approaches to the approaches assumed in the current cleanup plan
- Recognizes site risks can be mitigated using various approaches, including:
 - Remove the contaminants (e.g., excavation or treatment);
 - Control migration from the source of contamination (e.g., capping or containment); and
 - Limit chance for contact with contaminants (e.g., access and use restrictions)
- RBES process emphasizes that cleanup levels need to be consistent with current and assumed future land use

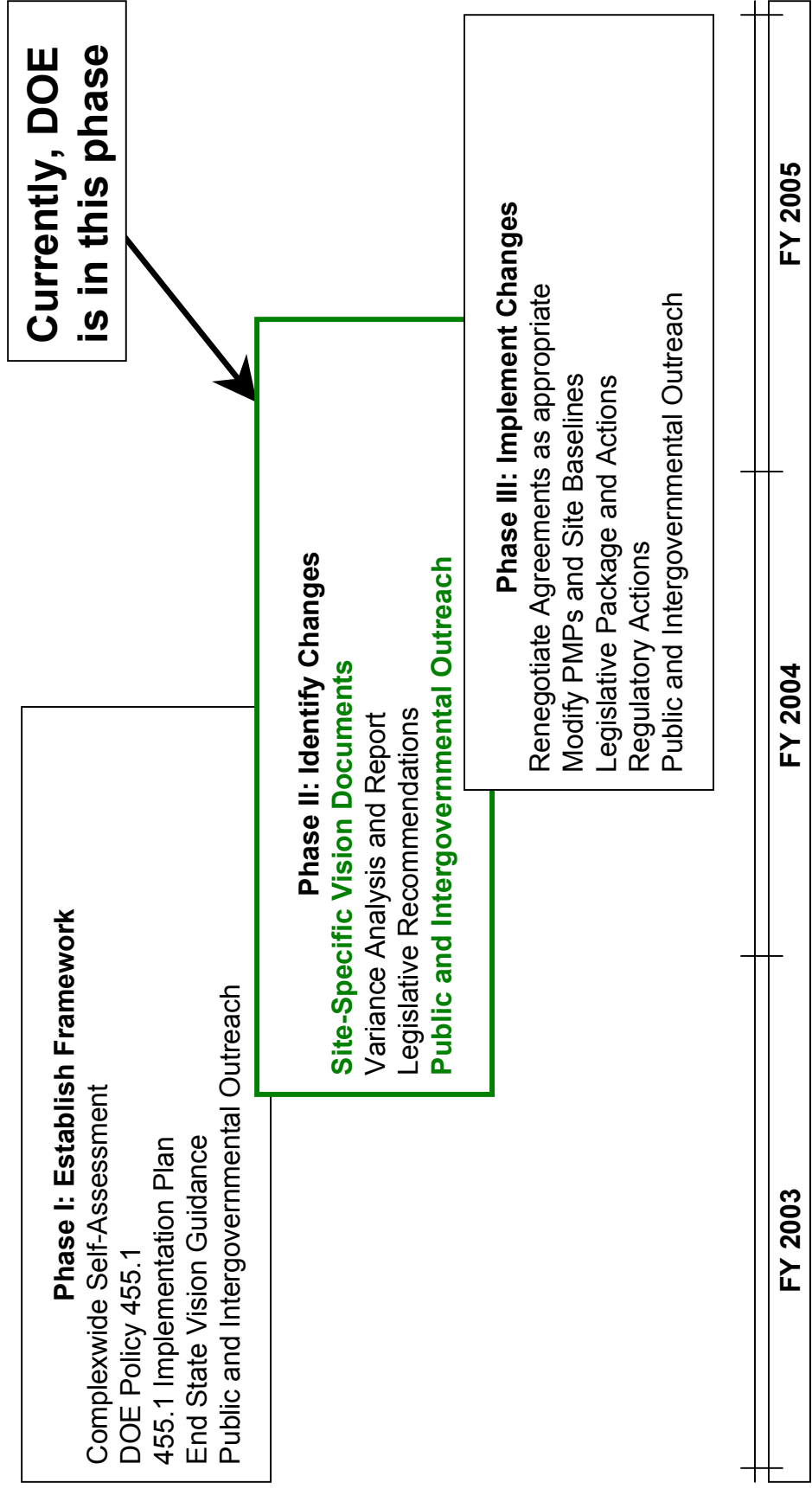


RBES Vision Document

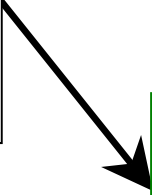
- Not a decision document
- Serves as a summary of the risk-based analysis that can be used to develop informed cleanup decisions and determine whether changes to current cleanup plan should be considered
- Any changes to current cleanup plan must be made in compliance with legal requirements, including:
 - Public Involvement
 - Protection of human health and the environment
 - Existing regulations, agreements, and schedules



RBES Implementation Phases



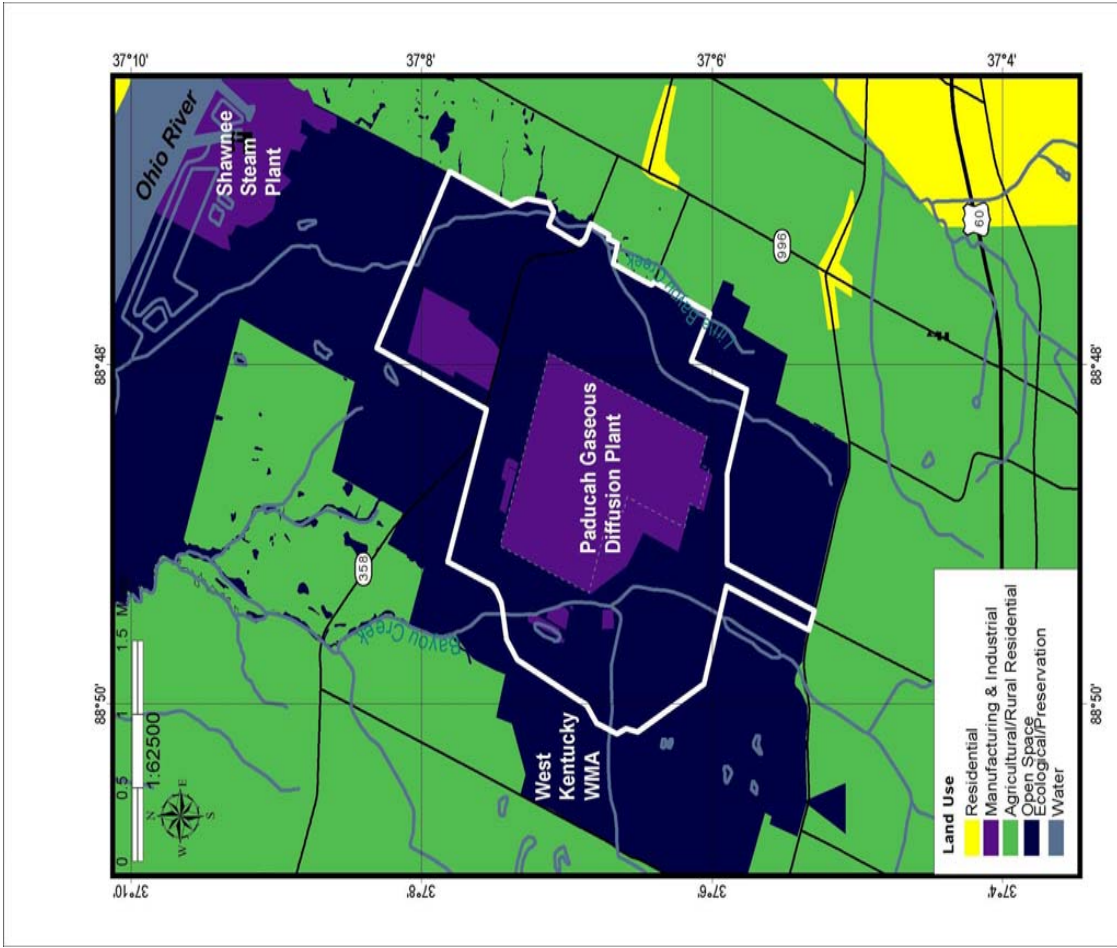
Currently, DOE is in this phase





Current and Assumed Future Land Use at Paducah

- The RBES assumed future land use matches the future land use assumptions developed under the current cleanup plan



Current and Assumed Future Land Use

Summary

- Future use same as current use.
- Continued manufacturing and industrial use inside fence.
- Wildlife management and recreational use of other DOE-owned property.
- Agricultural and rural residential use of surrounding area.



Document Development

- Divided the site into “hazard areas” (i.e., locations contributing to risk due to presence of contamination in groundwater, surface water, soils, and waste)
- Determined end state for each hazard area that is consistent with assumed future land use, minimizes risk to humans and the environment, and is sustainable (i.e., the risk-based end state)
- Identified actions at each hazard area that could be used to achieve the risk-based end state



Document Development

- Summarized current planned end state and the actions for each hazard area that are assumed to be used to achieve that end state
- Identified where current planned and RBES approach are consistent and where they differ (variances)
 - Assumed schedule
 - Assumed cost
 - Assumed risks (e.g., method to achieve risk reduction, sources of risk during implementation of actions, risks remaining at each end state)



Risk Balancing

- The analysis in the RBES document considers:
 - the differences in risks to human health and the environment at the risk-based and current planned end states
 - the differences in risks to human health and the environment associated with actions that may be used to achieve the end states
- Individuals and wildlife can be put at risk both by contamination in the environment and by attempts to clean up the contamination
- More intrusive cleanup methods (e.g., excavation and treatment) may be more permanent (because they remove the contaminants), but can result in greater near-term risks to workers, the public, and the environment during implementation



Examples of Consistency End States

- Continuation of access and excavation restrictions
- Treatment to reduce TCE concentration in soil and groundwater at the major source at the PGDP (i.e., near C-400 Cleaning Building)
- Continued monitoring as concentrations in groundwater plumes decrease
- Excavation and disposal of sources of surface water contamination (extent of excavation varies)
- Completion of scrap and waste removal projects (includes DMSAs)
- Conversion and disposal of depleted uranium hexafluoride
- D&D of gaseous diffusion plant infrastructure



Examples of Variances End States

CPES Actions	RBES Actions
Continuation of Water Policy (short-term agreements with existing property owners)	Enhanced Institutional Controls (e.g., legal deed restrictions, property purchases)
Point of exposure for determining risk from contaminant migration at the PGDP fence-line	Point of exposure for determining risk from contaminant migration at the PGDP property boundary
Reduce TCE concentration at multiple source locations using treatment	Reduce TCE concentration at primary source of off-site contamination using treatment (C-400 Proposed Plan)
Excavate some burial grounds and cap remaining. Continue monitoring and access controls	Cap all burial grounds. Continue monitoring and access controls
Soil Cleanup Levels - clean industrial areas to residential levels	Soil Cleanup Levels - clean industrial areas to industrial levels



Document Status

- Report follows guidance available at <http://www.em.doe.gov/> (see “Risk-Based End States”)
- Paducah RBES documents
 - First draft released on January 31, 2004
 - Most recent draft is: *Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-2119&D2/R2) - issued April 30, 2004
 - Includes changes made in response to stakeholder comments received through April 15, 2004
 - Available at: http://www.bechteljacobs.com/pad_reports.shtml



Document Status

- DOE HQ has extended the original September 2004 deadline for the final Paducah RBES document submittal. No new deadline has been announced.
 - Final document will include changes made in response to all additional comments received



Examples of Actions Taken in Response to Comments Received to Date

- Extended the public outreach and comment period by more than six months
- Clarified differences between current water policy and concepts under consideration for enhanced institutional controls
- Added the C-400 Groundwater Action to risk-based end state
- Added discussion of risk balancing
- Expanded discussion of ecological risk
- Added appendix summarizing stakeholder activities and comments, including changes made to the document in response to comments.



Summary of Public Participation

- January 15 – Briefed CAB at monthly meeting on RBES background, purpose, and process
- February 2 – Draft RBES Document placed in McCracken County Library and DOE Environmental Information Center
- February 5 – Held Public Meeting at West Kentucky Community and Technical College
- February 26 – First Stakeholder Workshop on RBES
- March 1 – Participation in radio call-in show on WKYX AM – reaired on March 17
- March 11 – Second Stakeholder Workshop on RBES
- March 18 – Discussion of RBES status at monthly CAB meeting
- April 15 – Notified CAB of extension of public participation period to September 1, 2004
- April 30 – Revised draft RBES Document placed in McCracken County Library and DOE Environmental Information Center
- May 11 – Presentation to Paducah Chamber of Commerce Community Business and Development Committee
- June 3 – Third Stakeholder Workshop on RBES
- June 17 – Update presented at monthly CAB meeting
- June 18 – Presentation to Paducah Board of Realtors



Future Stakeholder Involvement

- Portsmouth/Paducah Project Office is considering whether to hold additional public meetings
- DOE is planning a national RBES meeting in October 2004
- We encourage all stakeholders to continue to review and comment on the RBES document
 - Document is available for review at the McCracken County Public Library and the DOE Environmental Information Center
 - Also available on internet at http://www.bechteljacobs.com/pad_reports.shtml

Attachment 11

JUNE 3, 2004, WORKSHOP MATERIALS

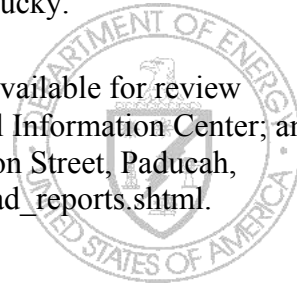
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U.S. Department of Energy DRAFT RISK-BASED END STATE VISION

The U. S. Department of Energy (DOE) has prepared a revised Draft Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-2119&D2R2) as an analytical tool to assure environmental cleanup efforts are consistent with the site's future use planning. The draft document addresses comments received from the public sector. The Department is seeking additional public input during the extended review period. A public meeting will be held at 7:00 p.m. Thursday, June 3 at the Environmental Information Center, 115 Memorial Drive, Paducah, Kentucky.

Document Availability: The revised draft will be available for review beginning the afternoon of April 30 at the Environmental Information Center; and at the McCracken County Public Library, 555 Washington Street, Paducah, Kentucky, or online at http://www.bechteljacobs.com/pad_reports.shtml.

For more information call (270) 441-6819.



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*Status of the Risk-Based
End State Vision Process
for the
Paducah Gaseous Diffusion
Plant*

*Public Workshop
June 3, 2004*



RBES PROCESS

- Evaluation to identify alternate cleanup approaches to address site risks as opposed to the assumed actions in the current baseline plan
- Recognizes site risks can be mitigated using various approaches, including:
 - Source removal (e.g., excavation); and
 - Taking action to prevent migration of contaminants and/or receptors from coming into contact with contaminants (e.g., deed restrictions and capping landfills)
- RBES process emphasizes that cleanup levels need to be consistent with current and reasonably foreseeable future land use

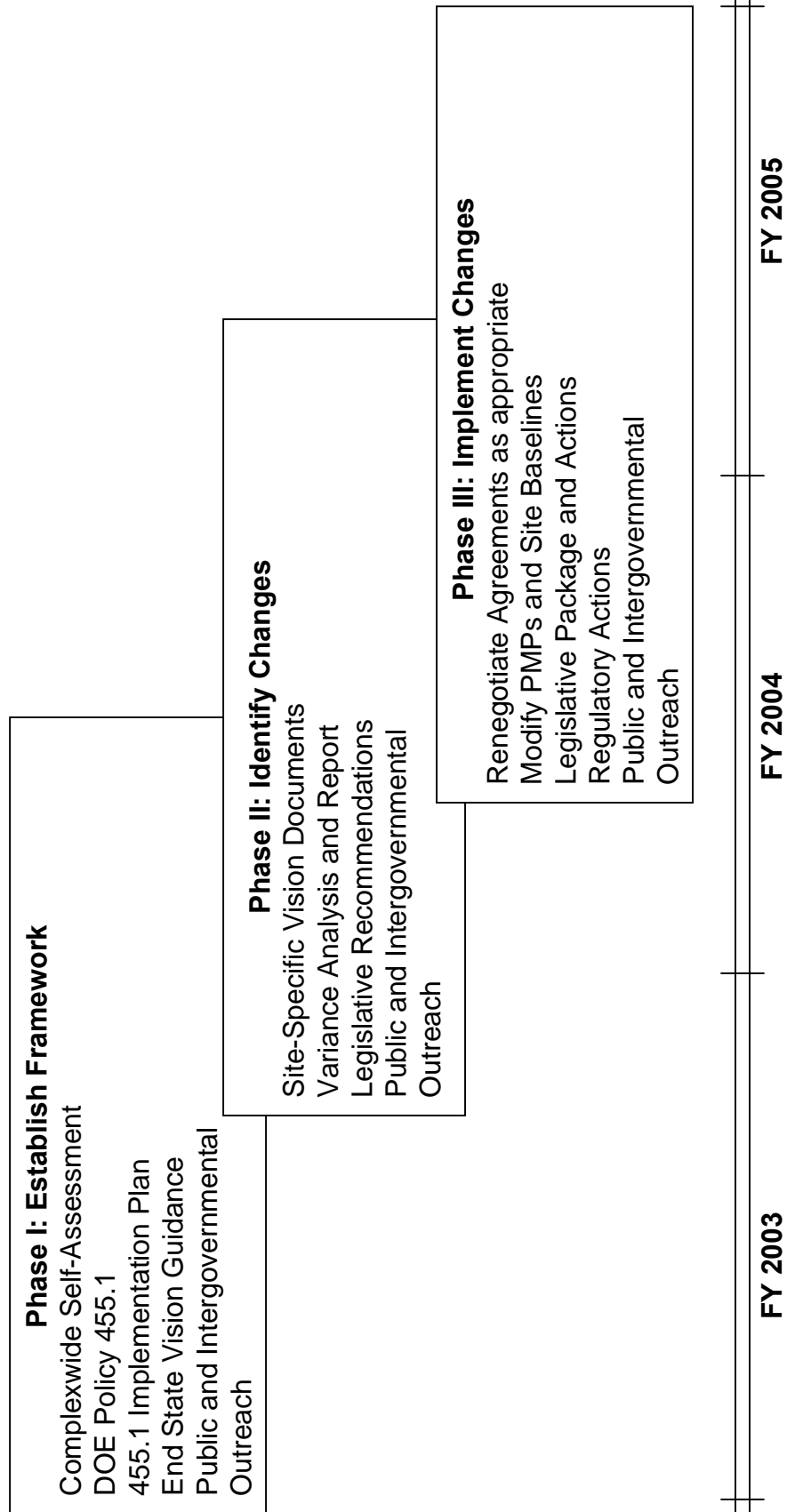


RBES VISION DOCUMENT

- Not a decision document
- Serves as an analytical tool to support informed cleanup decisions in conjunction with the following considerations:
 - Public Involvement
 - Protection of human health and the environment
 - Existing regulations, agreements, and schedules



RBES Implementation Phases





Current and Reasonably Foreseeable Future Land Use at Paducah

- Under the RBES, future use is the same as current use
- Continued manufacturing and industrial use inside fence
- Wildlife management and recreational use of other DOE-owned property.
- Agricultural and rural residential use of surrounding area



Risk Balancing

- Individuals and wildlife can be put at risk both by contamination in the environment and by attempts to clean up the contamination
- More intrusive cleanup methods (e.g., excavation and disposal) may be more permanent (because they remove the contaminants), but can result in greater near-term risks to workers, the public, and the environment during implementation



Document Development

- Divided the site into “hazard areas” (e.g., groundwater, surface soils and burial grounds)
- Identified differences between current planned approaches and RBES approach



EXAMPLES OF SIGNIFICANT VARIANCES AT THE PGDP

CPES Actions	RBES Actions
Continuation of Water Policy (short-term agreements with existing property owners)	Enhanced Institutional Controls (e.g., legal deed restrictions, property purchases)
Reduce TCE concentration at primary and secondary sources (e.g., C-400, C-720, SWMU 1) using treatment.	Reduce TCE concentration at primary source of off-site contamination (i.e., C-400) using treatment.
Excavate some burial grounds and cap remaining. Continue monitoring and access controls.	Cap all burial grounds. Continue monitoring and access controls.
Soil Cleanup Levels - clean industrial areas to residential levels.	Soil Cleanup Levels - clean industrial areas to industrial levels.



Future Stakeholder Involvement

- DOE is planning to seek individual meetings with various area groups, including:
 - Chamber of Commerce (completed)
 - Environmental groups
 - Local government representatives
 - Area reuse organization



Document Status

- Report follows guidance available at www.em.doe.gov/office.html (see “Hot Topics”)
- Paducah Draft RBES documents
 - 1st draft issued January 31, 2004
 - 2nd draft issued April 30, 2004
- Final-draft Paducah RBES document to be submitted to DOE-HQ by September 1, 2004

Attachment 12

JUNE 17, 2004, MATERIALS FROM PRESENTATION TO CAB ON STATUS OF RBES

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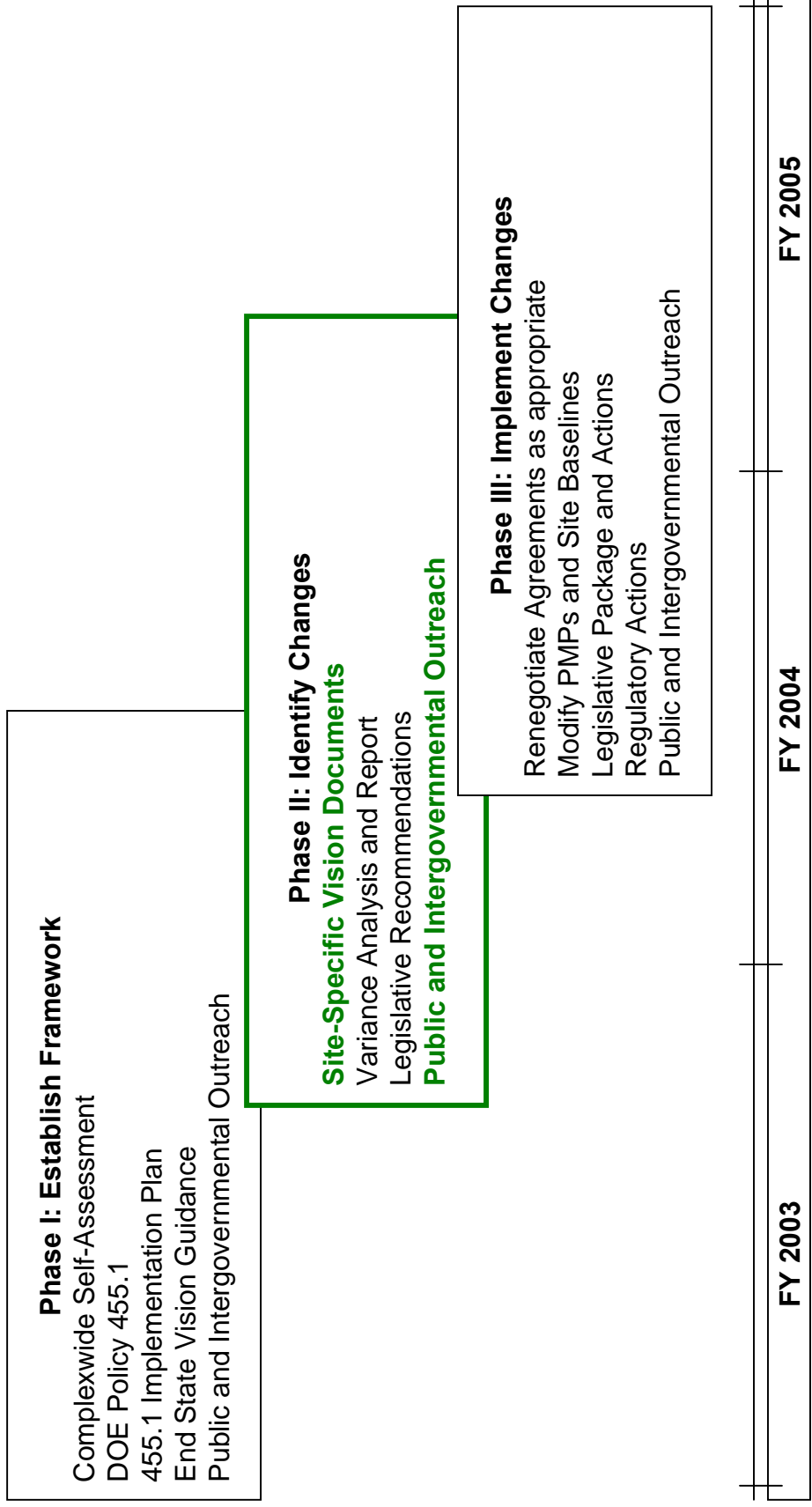


*Status of the Risk-Based
End State Vision Process
for the
Paducah Gaseous Diffusion
Plant*

*CAB Update
June 17, 2004*



RBES Implementation Phases





Document Status

- First draft issued January 31, 2004
- Second draft issued April 30
- Final draft due to DOE-HQ September 1, 2004



Comment Status

- Received DOE-HQ comments on first draft
- Second draft issued for public comment on April 30
 - Placed on EIC public web site April 30
 - Placed in EIC and McCracken County Public Library April 30
 - Notice published in the *Paducah Sun* April 30-May 2
- DOE-PPPO letter sent to various organizations June 1
- Public meeting offered June 3
- Will continue to seek comments into August



Impact of Major Comments Received to Date

- Extended the end of the public outreach and comment period from March to August
- Added discussion of risk balancing
- Added the C-400 Groundwater Action
- Expanded discussion of ecological risk
- Clarified differences between current water policy and concepts under consideration for enhanced institutional controls

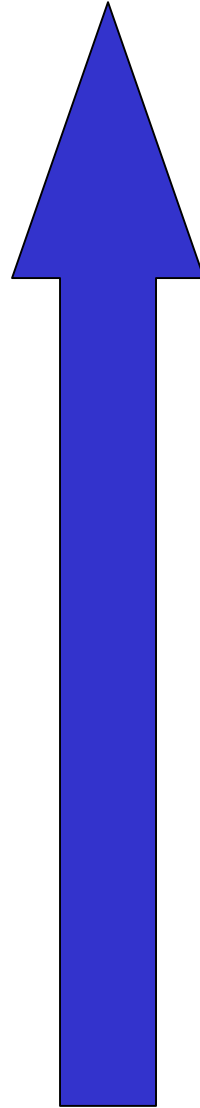


Future Stakeholder Involvement

- Public meeting in planning for July 15, hosted by Greater Paducah Economic Development Council and Paducah Chamber of Commerce
- Invitation from Active Citizens for Truth pending
- Other invitations expected



BACKUP SLIDES





Risk Balancing

- Individuals and wildlife can be put at risk both by contamination in the environment and by attempts to clean up the contamination
- More intrusive cleanup methods (e.g., excavation and disposal) may be more permanent (because they remove the contaminants), but can result in greater near-term risks to workers, the public, and the environment during implementation



Examples of Significant Variances

CPES Actions	RBES Actions
Continuation of Water Policy (short-term agreements with existing property owners)	Enhanced Institutional Controls (e.g., legal deed restrictions, property purchases)
Reduce TCE concentration at primary and secondary sources (e.g., C-400, C-720, SWMU 1) using treatment.	Reduce TCE concentration at primary source of off-site contamination (i.e., C-400) using treatment.
Excavate some burial grounds and cap remaining. Continue monitoring and access controls.	Cap all burial grounds. Continue monitoring and access controls.
Soil Cleanup Levels - clean industrial areas to residential levels.	Soil Cleanup Levels - clean industrial areas to industrial levels.

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Attachment 13

JUNE 15, 2004, OVERVIEW OF BGOU PRESENTED TO CAB BY JOHN RUSSELL

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Burial Grounds Operable Unit

Presented by Dr. John P. Russell

Waste Operations Task Force

July 15, 2004



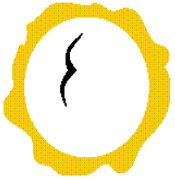
Burial Grounds Operable Unit

- SWMU 2 - C-749 Uranium Burial Grounds
- SWMU 3 - C-404 Low-level Radioactive Waste Burial Ground
- SWMU 4 - C-747 Contaminated Classified Burial Ground
- SWMU 5 - C-746-F Classified Burial Ground
- SWMU 6 - C-747-B Burial Ground
- SWMU 7 - C-747-A Burial Ground
- SWMU 30 - C747-A Burn Area
- SWMU 145 - P-Area Residential/Inert Landfill Borrow Area



SWMU 2: C-749 Uranium Burial Ground





SWMU 2: C-749 Uranium Burial Ground

- **Size:** 150 ft X 200 ft X 17 ft – 510,000 ft³
- **Waste:**
 - Uranium – 245,000 kg or 539,000 lbs
 - Pyrophoric (D003), Uranium oxides, and UF₄
 - Petroleum-based and synthetic oils – 259,900 liters or 59,000 gal
 - Contaminated TCE (F001) – 1,800 liters or 450 gal
- **Physical form:** drums
- Identified in Hazard Area 1 (GWOU) in RBES

Current Planned End State

Access and excavation restrictions
PGDP Water Policy

Source removal at burial grounds
monitored with monitored natural
attenuation

RBES

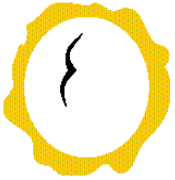
Same

Enhanced institutional
controls

Cap burial grounds with
monitored natural
attenuation

SWMU 3: C-404 Landfill





SWMU 3: C-404 Landfill

- Used as sediment basin for uranium-contaminated waste water generated from the C-400 facility from 1952-1957
- Designed with tamped earthen floors and clay dike walls
- Converted to a uranium-contaminated solid waste disposal facility in 1957
- Closed in July 1987 as a Subtitle C landfill, clay cap was installed
- Installed sump at southwest corner to pump leachate into an underground line leading to the NSDD
- Waste:
 - Uranium - 3,000,000 kg or 6,600,000 lbs, some contaminated with TCE, radionuclides, and metals
 - Smelter furnace liners
 - ~450 drums of EP Toxic wastes D006, D008 and D010
- Identified in the RBES Hazard Area 3 (CPES and RBES differ)

Current Planned End State RBES

Access and excavation restrictions Same

Excavate burial grounds Cap burial grounds



SWMU 4: C-747 Contaminated Burial Yard and C-748-B Burial Area



C-748-B



C-747



SWMU 4: C-747 Contaminated Burial Yard and C-748-B Burial Area

- Used for burial of uranium-contaminated trash and equipment, some trash burned prior to being covered
- Soils analyses indicate the presence of PCB's, TCE and it's degradation productions, various radionuclides of plutonium, uranium, neptunium and radium
- Waste:
 - Contaminated and uncontaminated trash
 - Scrap equipment (steel, Monel, etc.) with surface contamination from the enrichment process
- Identified in the RBES Hazard Area 1 (GWOU)

Current Planned End State

Access and excavation restrictions

PGDP Water Policy

Source removal at burial grounds with monitored natural attenuation

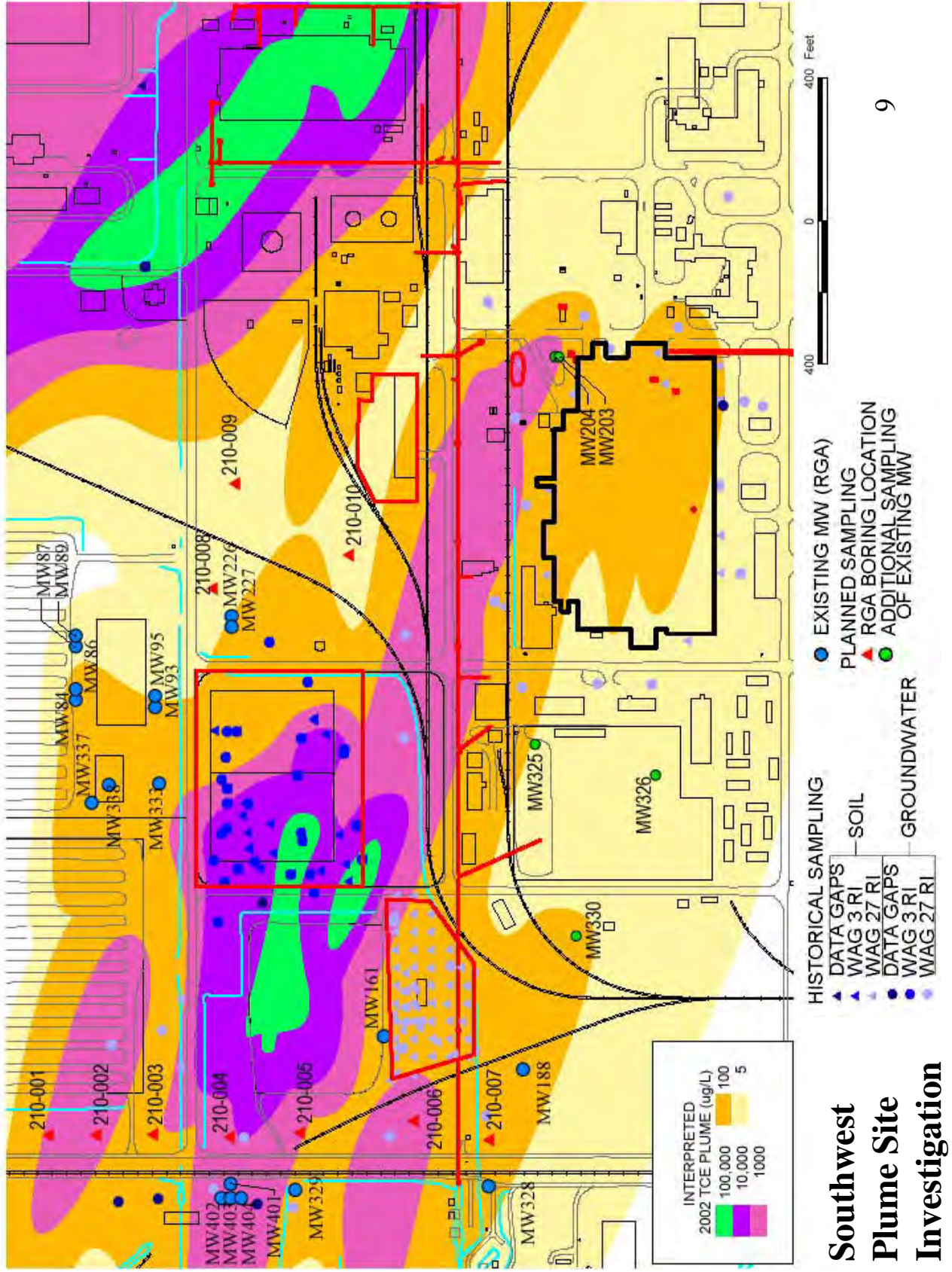
RBES

Same

Enhanced institutional controls

Cap burial grounds with monitored natural attenuation

SWMU 4: C-747 Contaminated Burial Yard and C-748-B Burial Area





SWMU 5: C-746-F Classified Burial Yard





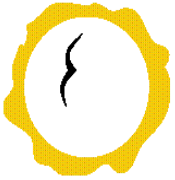
SWMU 5: C-746-F Classified Burial Yard

- Used for burial of contaminated and uncontaminated classified scrap from 1965-1987
- Covered with two to three feet of earth
- Wastes:
 - Security classified wastes
 - Radionuclide contaminated wastes including contaminated scrap metal and slag from nickel and aluminum smelters
 - Isolated occurrences of TCE, metals, PCB's dibenzofuran, and polycyclic aromatic hydrocarbons reported from sampling media
- Identified in RBES Hazard Area 6 (CPES and RBES do not differ)
 - Maintain current land cover
 - Access and excavation restrictions
 - PGDP Water Policy (enhanced institutional controls)
 - Landfill Cap
 - Monitoring



SWMU 6: C-747-B Burial Ground





SWMU 6: C-747-B Burial Ground

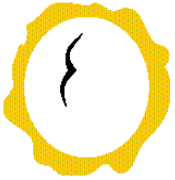
- Used for burial of various types of solid scrap metal
- Site consists of five separate burial plots, Areas H, I, J, K and L
- Each plot contains a specific waste
- Waste:
 - Magnesium scrap (Areas H&K)
 - Contaminated laboratory exhaust fans (Area I)
 - Aluminum scrap (Area J)
 - Contaminated UF6 condenser (Area L)
- Identified in the RBES in Hazard Area 3 (CPES and RBES differ)

Current Planned End State RBES

Access and excavation restrictions Same

Excavate burial grounds

Cap burial grounds



SWMU 7: C-747-A Burial Ground

- Used for burial of a wide variety of solid waste, equipment, and scrap metal from 1957-1979
- Burial pits A-G were excavated, filled and covered with three feet of soil
- Primary radiological contaminant is uranium
- Primary metals are arsenic, beryllium, cadmium, copper, nickel and zinc
- Primary VOC is TCE and degradation products, polyaromatic hydrocarbons and PCB's
- Wastes:
 - Non-combustible mixed waste and some contaminated equipment (Area A - 100,000 cubic ft.)
 - Non-combustible and non-contaminated mixed solid waste and equipment (Areas B, C, and G - quantity unknown)
 - Contaminated concrete (Areas D and E - ~20 tons)
 - Uranium contaminated scrap metal and equipment (Area F - quantity unknown)
- Identified in RBES Hazard Area 6 (CPES and RBES do not differ)
 - Maintain current land cover, access and excavation restrictions, PGDP Water Policy (enhanced institutional controls), landfill cap and monitoring



SWMU 30: C-747-A Burn Area

- Used for burning combustible mixed solid waste
- Waste:
 - Combustible trash and residue
- Identified in RBES Hazard Area 6 (CPES and RBES do not differ)
 - Maintain current land cover
 - Access and excavation restrictions
 - PGDP Water Policy (enhanced institutional controls)
 - Landfill Cap
 - Monitoring



SWMU 145: Area P Construction/Demolition Debris Disposal and Spoils Area

- Used by various subcontractors to discard scrap and waste materials from early 1950's to early 1980's
 - Accumulated scrap pile were moved from the plant and covered with dirt
 - Area was later permitted for the construction of the S&T Landfill
 - Waste:
 - Construction and demolition debris including concrete, roofing materials, wire, wood, welding rods and asbestos containing materials
 - Tarry material containing elevated levels of uranium and technetium was identified at the western perimeter of the C-476-S Landfill in 1999
 - Current site of the S&T Landfill investigation, DOJ lawsuit
 - Listed in the RBES Hazard Area 3 (CPES and RBES differ)
- | | |
|------------------------------------|----------------------------------|
| <u>Current Planned End State</u> | RBES |
| Access and excavation restrictions | Same |
| Excavate burial grounds | Cap burial grounds ¹⁶ |

Attachment 14

**COMMENTS FROM DOE HEADQUARTERS AND
NOTES FROM DOE RBES NEXT STEPS WORKSHOP**

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**COMMENTS FROM DOE HEADQUARTERS
and notes from
DOE RBES NEXT STEPS WORKSHOP**

Final written comments from DOE HQ were not received when this revision of the PGDP End State Vision Document was prepared. Once received, these comments will be added to the appendix at this location. The notes from the workshop are attached.

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DOE RBES NEXT STEPS WORKSHOP
Summary of Discussion and Outcomes
October 6 and 7, 2004
Chicago, Illinois

Overview

The stated goals for the October 6 and 7 Risk Based End States (RBES) Next Steps Workshop were:

- ◆ To reinforce the understanding that the development of potential end-state alternatives is a two-step process. The first step is to develop Vision documents proposing alternatives based on reduced health, safety or environmental risk, and the second is the evaluation of these alternatives based on criteria distinct from risk.
- ◆ To identify and develop criteria for evaluating alternatives, ultimately leading to a decision on which to pursue.
- ◆ To emphasize the importance of stakeholder involvement in developing the criteria, the process for evaluating alternatives, and continued meaningful interaction.

Workshop participants included approximately 110 people from diverse perspectives including: U.S. Department of Energy Office of Environmental Management (DOE EM) , U.S. DOE Office of Legacy Management (DOE-LM); US DOE site managers; Federal, State, Tribal, and local government, U.S. Environmental Protection Agency (EPA) headquarters and regional offices, staff from the National Governors Association (NGA), the State and Tribal Governments Working Group (STGWG) and the Energy Communities Alliance (ECA), and individuals from the organization Alliance for Nuclear Accountability (ANA). The full list of attendees is provided in Appendix A.

Meeting Summary Structure

This meeting summary is not intended to be a verbatim record of conversations, but instead is meant to provide an overview of the discussions and outcomes of the Workshop. Key action items identified in the meeting and a synopsis of the major questions and comments discussed during the various sessions are noted below. Copies of slides and handouts presented during the meeting can be obtained from DOE's Environmental Management website : www.em.doe.gov (under the Risk Based End States window) and NGA's Federal Facilities Task Force website: www.fftfcleanupnews.org.

This summary is organized in the following manner:

I. Ground Rules for the Meeting

II. Outcomes of the Meeting

- A. Closing Comments by Paul Golan, Acting Assistant Secretary of Environmental Management, DOE
- B. Closing Comments by Group Participants
- C. Common Themes from the Breakout Groups as Identified by the Facilitators

III. Formal Sessions

- A. Opening Comments by Paul Golan; Kara Colton, Manager of the NGA Federal Facilities Task Force; Bob Goldsmith, Director Office of Core Technical Group, DOE EM; and John Lehr, staff lead on RBES
- B. Panel of Representatives from State, Local, Tribal, and Non-governmental Organizations (NGOs)
- C. Panel of Site Managers
- D. Summary of Comments by John Greeves, Nuclear Regulatory Commission
- E. Summary of Comments by Jim Woolford, Environmental Protection Agency

Appendix A: Participants Lists

Appendix B: Presentations

- A. Yellow Group (Facilitator: Catherine Morris, The Keystone Center)
- B. Blue Group (Facilitator: Jerry Boese, Ross & Associates)
- C. Red Group (Facilitator: Seth Kirshenberg, ECA)
- D. Green Group (Facilitator: Kristi Parker Celico, The Keystone Center)

Appendix C: *Final Report of the Federal Facility Environmental Restoration Dialogue Committee: Consensus Principles and Recommendations for Improving Federal Facilities Cleanup.* Excerpt from Chapter 5.

I. GROUND RULES FOR THE MEETING

The following ground rules were agreed to at the outset of the meeting:

- A. Assume discussions are as individuals and not as formal policy positions on behalf of organizations.
- B. Post-meeting, summarize only your own views.
- C. Basic rules of engagement include:
 - ◆ No personal attacks
 - ◆ Propose solutions, don't just criticize
 - ◆ Share the time

II. OUTCOMES OF THE MEETING

Please note that the following are merely summaries of closing comments and common themes heard during the meeting. They do not represent a consensus of the group.

A. Closing Comments by Paul Golan, Acting Assistant Secretary for Environmental Management

Below is a brief summary of Paul Golan's "take-aways" noted at the end of the workshop.

- ◆ One consistent recommendation heard was that RBES policy might be more appropriately called End States policy because it involves consideration of more than risk.
- ◆ The conclusions and policies for end states need to be simple and clear. The purpose is to make the program better and more innovative by asking if there are better ways to clean-up DOE facilities.
- ◆ End states should be developed through a consensus process with communities and should result in an end state for the DOE facility and individual clean-up sites that all governments and stakeholders can visualize.
- ◆ The RBES process needs to be tailored for each clean-up site. However, where there is an opportunity, common problems across clean-up sites should be addressed with common solutions.
- ◆ In some cases, it may be appropriate to move forward with the existing clean-up options rather than investigate new alternatives through the RBES process at this point. The focus of the RBES program should be on the "variances" that have the most potential to meet all the current clean up criteria including regulatory acceptance. [DOE used the term "variances" to refer to alternative end states.]
- ◆ Communication between DOE headquarters DOE facility site managers, stakeholders, impacted governments and regulators needs to be early and often.
- ◆ The clean-up plan ultimately must be sustainable, with clear plans for long-term stewardship, if needed, and adequate funding.
- ◆ The meeting summary will be distributed to all the Workshop participants for comment. The outcomes of the meeting should not be viewed as consensus agreements or mandates for Congressional action.

- ◆ The Working Group for the RBES Workshop will meet to determine the next steps in the process for development of stakeholder input on RBES Vision documents and evaluation of alternatives using commonly-agreed to criteria.

B. Participants' Outcomes

At the end of the meeting, participants reflected on the day and a half meeting and made the following closing comments as individuals:

Common themes heard and advice to DOE:

- ◆ Local and national dialogues are needed. Local dialogues are needed to agree upon long-term end states for the DOE clean-up site. National dialogues are needed to address national policy issues such as long-term stewardship, point of compliance, etc.
- ◆ Use a tailored approach for each DOE facility. DOE needs to take into account the current status at each clean-up site and the level of current support for the clean-up plan and apply the RBES policy in a customized fashion.
- ◆ Use existing regulatory framework for decision making at the clean-up sites. This policy needs to be implemented within the existing regulatory framework for clean-up. Don't reinvent the wheel.
- ◆ Share DOE's business model for cleaning up EM facilities. DOE needs to articulate its business model to the full diversity of stakeholders. Some noted that DOE might need to develop its business model first.
- ◆ Accelerated narrowing of variances. DOE, with governmental and public input, should quickly narrow the variances under consideration to reduce the number of variances that should be considered in detail and eliminate the perception that unreasonable alternatives will be pursued.
- ◆ Future meetings with governmental entities and stakeholders should build on the energy and ideas of this meeting.
- ◆ DOE should work with stakeholders before making further policy decisions regarding the RBES policy.
- ◆ DOE should use the RBES process as an opportunity to educate the public and others about the general clean-up process and DOE's intent.
- ◆ Some RBES terms need to be changed or clarified to avoid misunderstandings.
- ◆ DOE needs to rebuild trust.
- ◆ DOE should seek early communication with Tribes and should not treat them as a single entity. Each tribe has unique concerns based on the circumstances of the clean-up site. Combining the objective of accelerated clean-up with the RBES goals of doing clean-up better and smarter may lead to conflicting objectives.

Some of the participants made the following comments when asked what participants hope DOE will **not do** following this meeting:

- ◆ Do not just tweak the process.

- ◆ Do not take unilateral action to change laws.
- ◆ Do not describe this meeting as a consensus effort.
- ◆ Do not allow the RBES process to hold up clean-up of sites that are well under way and near completion.
- ◆ Do not make the RBES documents to be submitted in December 2004 final documents. Do keep the Vision documents alive and changing with new information
- ◆ Do not let worker safety become an excuse for not cleaning-up. The participants recognized the importance of worker safety, but were concerned that the process should balance all risks.
(The last two bullets were added at the end of the meeting by participants who were unable to comment due to lack of time.)

C. Common Themes from the Breakout Groups as Identified by the Facilitators

Process

- ◆ Although there were strongly varying opinions regarding the usefulness of the RBES policy and approach, participants in all four groups noted that periodic review of clean-up approaches is needed to evaluate new information (such as changes in surrounding land use, technology, health effects, etc.) and to make adjustments if appropriate to improve clean up. This should be an on-going dialogue with stakeholders with the goal of building consensus around an end state and land use that is an asset to the community.
- ◆ A critical component of a successful review process is early, inclusive and transparent interaction with governmental entities and stakeholders at the local and state level. One of the goals for this communication should be establishing a better understanding of the goals and terminology of the RBES policy.
- ◆ The “mis” perception that RBES is on a separate track from the existing regulatory framework including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), etc.] should be addressed by:
 - Acknowledging the criteria that have been applied to the existing clean-up plans; and
 - Not pursuing changes in clean-up that require changes in regulations or laws without consultation with stakeholders.
- ◆ RBES should be flexible enough to take into account differences at each clean-up site. For instance, some sites should not have to develop a Vision document because they are already close to completion of clean-up.
- ◆ DOE should identify and “winnow out” variances that can be addressed under the existing regulatory framework or should not be considered further because of clear indicators that they are not actionable changes.
- ◆ Some policy issues should be resolved at the national level through collaborative stakeholder processes, including:
 - Groundwater point of compliance
 - Institutional controls
 - Long-term stewardship

- Future land use
 - Waste management (including “orphan” waste)
 - Understanding what DOE is going to do to secure long-term sustainability
 - Definition of risk and risk management
 - The disposition of the clean-up sites after EM funding ends.
 - Criteria for evaluating the variances
- ◆ DOE EM should develop a communication plan for working with diverse stakeholders and Congress to ensure that long term funding and planning are coordinated.
 - ◆ DOE should identify common lessons learned from current clean-up efforts and share this list with clean-up sites.
 - ◆ Independent third-party review or technical assistance of risk assessments should not be viewed as an additional approval step. (This was only brought up in one group, but they indicated they spent a lot of time on it.)

Criteria

- ◆ Criteria in the existing regulatory framework should be the threshold criteria.
- ◆ Criteria for evaluating changes in clean-up approaches must be tailored to each clean-up site.
- ◆ Some criteria could be developed at the national level, but there is a need for flexibility in applying criteria at the site-level and finding the appropriate balance among all the criteria by the local site personnel, governmental entities and stakeholders.
- ◆ Human health and environmental quality are the most important drivers for clean-up.
- ◆ Groups identified a range of criteria that should be considered, but none of the groups reported on the more specific question of how the criteria should be applied.

III. FORMAL SESSIONS

A. Opening Remarks

Paul Golan, US DOE Acting Assistant Secretary for Environmental Management

Kara Colton, Manager, National Governors Association (NGA) Federal Facilities Task Force

Bob Goldsmith, Director, Core Technical Group, US DOE Office of Environmental Management

John Lehr, Core Technical Group, US DOE Office of Environmental Management

Paul Golan emphasized the importance of this meeting in opening lines of communication with stakeholders and his interest in exploring better ways of accomplishing clean-up of sites based on good science, stakeholder input and good process.

Kara Colton hoped that the meeting would help improve transparency and communication with stakeholders that had been lacking in the development of some of the Vision documents and cited the importance of having the site managers involved in the discussion during the workshop.

John Lehr outlined the five hallmarks of the RBES program:

- ◆ Priority on clean-up
- ◆ Ensuring that the end state is consistent with land use
- ◆ Commitment to achieving sustainable outcomes

- ◆ Admonition to coordinate and interact with stakeholders, regulators and affected governments
- ◆ Use of existing regulatory process

He acknowledged some missteps in the process including underestimating the task, but commended the site managers for responding admirably to the new policy requirements. Some of the risk analysis steps may have been done before, but RBES has been important in providing a policy framework for the risk assessment process.

Bob Goldsmith outlined the two step process that has evolved in RBES to clarify the distinction between step 1, the risk assessment phase, which leads to the development of a Vision document, and step 2, the decision stage, where criteria are developed and applied to the alternatives and variances between the Vision document and the existing clean-up plans. Bob also expressed his hope that this workshop could lead to development of some of the criteria that are appropriate for evaluating vision document alternatives. He confirmed a participant's position that the existing CERCLA and RCRA criteria should be applied, but said there may be other criteria that the workshop participants think should be added to the evaluation process.

He announced that EM is considering implementing a program whereby DOE will make funding available to stakeholders so that they can finance additional analysis where there is an information gap or the need for an independent review of the risk assessment.

B. State, Tribal, and Local Government and NGO Panel

Jon Sandoval, Environmental Council of the States

Seth Kirshenberg, Energy Communities Alliance

Dale Vitale, National Association of Attorneys General

Steve Gunderson, National Governors Association

Tom Winston, State and Tribal Government Working Group

Willie Preacher, State and Tribal Government Working Group

Jim Bridgman, Alliance for Nuclear Accountability

Obstacles/Concerns

- ◆ RBES has been viewed as a way of “getting around” existing statutes or a way to get a “back door” change in the regulations.
- ◆ Ill will and diminished trust have developed as a result of lack of collaboration with stakeholders and regulators; this must be taken into account in the process going forward.
- ◆ Many stakeholders are still not involved because they perceive that the decisions have already been made, and clean-up will go forward as planned.
- ◆ There has not been enough consideration of pragmatic adjustments to RBES program to accommodate actual clean-up site circumstances. For instance, should RBES be applied to sites if there is not adequate time to implement changes.
- ◆ Panel members expressed concern that the intent is simply to move wastes and hazards around rather than clean them up.
- ◆ Accelerated clean-up may be in conflict with adequate clean-up.
- ◆ Tribes should not be treated as a single entity. Each has a different perspective.
- ◆ Need to bring long-term stewardship back into the process for all clean-up sites, not just closure sites. Long-term sustainability must be robust and enforceable

- ◆ Prior agreements should be a major consideration because of the level of effort and compromise that went into developing them.

Opportunities

The panelists also outlined a number of opportunities to improve on the process and make RBES more effective. They pointed at opportunities to:

- ◆ Mend the communication problems of the past.
- ◆ Explore how and to what extent the clean-up sites can implement long-term stewardship plans.
- ◆ Learn from DOD/ECOS Sustainability Task Force, which is developing action plans and is designed to build stronger alliances among the stakeholders and DOD.
- ◆ Clarify how local government can become involved and part of the solution.
- ◆ Achieve an open-ended dialogue that begins today and continues throughout clean-up process.
- ◆ Develop a more bottom-up process and provide adequate resources to fund the process.
- ◆ Use the experience of some of the clean-up sites that are “success stories” as models for how it can be done.

C. DOE Site Managers Panel

Keith Kline, Manager, US DOE Richland Operations Office

Gerald Boyd, Manager, US DOE Oak Ridge Operations Office

Jeffrey Allison, Manager, US DOE Savannah River Operations Office

William Murphie, Manager, US DOE Portsmouth/Paducah Project Office

Robert Warther, Manager, US DOE Ohio Field Office

Frazer Lockhart, Manager, Rocky Flats Project Office

Bill Leake, Director, Idaho Clean-up Project Division, US DOE Idaho Operations Office

Key Obstacles/Concerns

- ◆ Site managers were put in the middle between communities and DOE Headquarters.
- ◆ The RBES policy attempts to make “one size fit all.”
- ◆ The RBES policy is not working the way it was intended.
- ◆ The RBES policy has created a lot of ill will in the community and has greatly complicated other issues.
- ◆ It is extremely difficult to balance worker safety, long-term risks, and stakeholder concerns.
- ◆ Rename the program something other than RBES.
- ◆ Some site managers said that there are no obstacles at their sites.

Key Opportunities Noted by Site Managers

- ◆ RBES is a tool for incorporating new information, ideas, or technology.
- ◆ We have learned a lot from our communities by going through this process.
- ◆ Whether it is RBES or some other tool, there needs to be an on-going, comprehensive approach to reviewing and incorporating new information.

D. Summary of Comments by John Greeves, Director, Division of Waste Management and Environmental Protection, Nuclear Regulatory Commission (A copy of Greeves PowerPoint presentation can be found at: www.em.doe.gov and www.fffccleanupnews.org)

NRC began to implement risk-informed decision-making in the 1980s and shared some lessons learned from their experience.

- ◆ Risk assessment policy is important in providing a single source of guidance.
- ◆ Risk assessment avoids unnecessary conservatism in clean-up plans.
- ◆ Risk communication is necessary but challenging.
- ◆ Should try to be consistent in applying risk assessment at each clean-up site.
- ◆ You do get smarter as you go along.

E. Summary of Comments by Jim Woolford, Director, Federal Facilities Restoration and Reuse Office, Environmental Protection Agency

Woolford acknowledged the need to use RBES to ground truth whether clean-up sites are on target, pointing out that some sites do not have an understanding of end states and in some cases have not done adequate risk analysis. Noting that the first policy draft of RBES appeared to allow risk to trump everything else, EPA expressed interest in working with DOE to fix the current shortcomings. Woolford also pointed to the 1996 Federal Facility Environmental Restoration Dialogue Committee (FFERDC) consensus document as an effort that has addressed and solved many of the issues that are being addressed by the RBES policy. (The 14 points excerpted from Chapter 5 referred to by Mr. Woolford are found in Appendix C and the full text can be found at www.epa.gov/swerffrr/fferc.htm)

APPENDIX A. PARTICIPANTS LIST

**U.S. DEPARTMENT OF ENERGY RISK BASED END STATES
NEXT STEPS MEETING**

October 6-7, 2004
Chicago, Illinois

Participants

First Name	Last Name	Title	Company	State
David	Abelson	Executive Director	Rocky Flats Coalition of Local Governments	CO
Thomas	Adams	Program Analyst	Department of Energy/Environmental Support	DC
James	Ajello	Chairman	EMAB	TX
Jeffrey	Allison	Manager	Department of Energy	SC
Lorraine	Anderson	Councilmember	City of Arvada	CO
Kathy	Angleberger	Ms.	USDOE Environmental Management	DC
Joni	Arends	Executive Director	Concerned Citizens for Nuclear Safety	NM
Kristie	Baptiste	Environmental Policy Analyst	Nez Perce Tribe	ID
Rachel	Blumenfeld	Chief Operating Officer	Department of Energy	KY
Gerald	Boyd	Manager, Oak Ridge Operations	U.S. Department of Energy	TN
Jim	Bridgman	Program Director	Alliance for Nuclear Accountability	DC
Mike	Carter	QA Manager	USEPA	DC
Tony	Carter	Acting Director, Stakeholder Relations	Department of Energy	DC
Nicholas	Ceto	Program Manager	U.S. EPA/Environmental Cleanup Office	WA
Laura	Cusack	Section Manager	Wa State Dept of Ecology	WA
Matthew	Duchesne	Policy Advisor	DOE/EM	DC
Gabriela Lopez	Escobedo	Program Manager	Los Alamos National Laboratory	NM
Dennis	Ferrigno	Dr.	DOE EMAB	CO
Amy	Fitzgerald	Government and Public Affairs Coordinator	City of Oak Ridge	TN
Scott	Flanders		Nuclear Regulatory Commission	MD

Douglas	Frost	Project Director	DOE Office of Environmental Management	DC
Dave	Geiser	Director, Office of Policy and Site Transition	DOE	DC
Robert	Geller	Federal Facilities Section Chief	Missouri Department of Natural Resources	MO
Luther	Gibson	Member of Oak Ridge Site Specific Advisory Board	DOE EM/SSAB	TN
Mark	Gilbertson	Acting Deputy Asst Secretary	Environmental Cleanup/Acceleration	DC
Annie	Godfrey	Chief, NC/SC/GA Section	EPA Region 4	GA
Paul	Golan	Acting Assistant Secretary Environmental Management	U.S. Department of Energy	DC
Robert	Goldsmith	Director	DOE	DC
Annemarie	Goldstein		INEEL Citizens Advisory Board	ID
Susan	Gordon	Director	Alliance for Nuclear Accountability	WA
John	Greeves	Director	U.S. Nuclear Regulatory Commission	DC
Deborah	Griswold	Team Leader Engineer	U.S. DOE/NNSA Service Center	NM
Steve	Gunderson	Rocky Flats Project Coordinator	Colorado Dept. of Public Health and Environment	CO
Carolyn	Hanson	Project Manager	ECOS	Dc
Brian	Hennessey	Federal Facilities Agreement Program Manager	DOE/Savannah River Site, SC	SC
Robert	Johnson		Nuclear Regulatory Commission	
Randall	Kaltreider		DOE/EM	MD
G. Phil	Keary	Environmental Restoration Manager	NNSA	MO
Seth	Kirshenberg	Executive Director	Energy Communities Alliance	DC
Keith	Klein	Manager	U.S.DOE Richland Operations Office	WA
Dave	Kling	Director, Federal Facilities Enforcement Office	U.S. Environmental Protection Agency	DC
Kenneth	Lapierre	Branch Chief	US EPA/R4 Federal Facilities Branch	DC

Bill	Leake	Idaho Cleanup Project Division Director	DOE, Idaho Operations Office	ID
John	Lehr	Staff Director Mission RBES	DOE	DC
David	Levenstein	Program Analyst	U.S. EPA	DC
Frazer	Lockhart	Rocky Flats Manager	Department of Energy	CO
Micah	Lowenthal	Senior Program Officer	The National Academies	DC
Peter	Maggiore	Consultant	DOE Office of Environmental Management	NM
John	Malleck	Section Chief	U.S. EPA Region 2	NY
Francis	Martinez	Governor	San Ildefonso Pueblo	NM
Raymond	Martinez	Councilman	San Ildefonso Pueblo	NM
Gregory	McBrien		DOE	DC
Monica	McEaddy	Environmental Engineer	U.S. EPA	DC
Catherine	Morris	Sr. Facilitator	Keystone Center	DC
Roger	Mulder	Director, Pantex Program	Texas State Energy Conservation Office	TX
William	Murphie	Manager	Department of Energy	KY
Ken	Niles	Assistant Director	Oregon Department of Energy	OR
Shirley	Olinger	Acting Assistant Manager for the River Corridor	DOE-RL/AMRC	WA
Inga	Olson		Alliance for Nuclear Accountability	CA
John	Owsley	Director	State of Tennessee	TN
Kristi	Parker Celico	Sr. Facilitator	The Keystone Center	CO
Barbara	Pastina	Dr	The National Academies	DC
Andrew	Persinko		Nuclear Regulatory Commission	
Mary	Picel	Project Manager	Argonne National Laboratory	IL
Anthony	Polk	Director, Soil & Groundwater Project	Department of Energy, Savannah River Operations Office, Office of the Assistant Manager for Closure Project	SC
Charles W.	Powers	Principal Investigator	CRESP	NJ
Willie	Preacher	Tribal DOE Director	Shoshone-Bannock Tribes	ID
John	Rampe		USDOE/RFPO	CO
John P.	Russell		PGDP Citizens Advisory Board	KY
Jennifer A.	Salisbury	Public Board Member	DOE Environmental Management Advisory Board	NM
Jon	Sandoval	Chief of Staff	Dept of Environmental Quality	ID
James	Saric	Project Manager	U.S. EPA Region 5	IL

Gene	Schmitt	Deputy Assistant Secretary	Us Department of Energy	DC
Kathy	Setian	Program Coordinator	U.S EPA Region 9	CA
Shelly	Sherritt		Department of Health and Environmental Control	SC
Ralph	Skinner	Project Manager	USDOE - Oak Ridge	TN
Anthony	Smith	Hanford Cultural Tribe	Nez Perce Tribe	ID
Christopher W.	Smith	Member, Oak Ridge Site Specific Advisory Board	DOE EM/SSAB	TN
Victoria	Soberinsky	Chief of Staff	U.S. Department of Energy	DC
Michael	Sobotta	Hanford Cultural Coordinator	Nez Perce Tribe	ID
Andrew	Szilagyi		DOE	DC
Sara	Szynwelski		Energy Communities Alliance	DC
Tuss	Taylor	DOE Project Program Manager	Kentucky Department for Environmental Protection	KY
Kathleen	Trever		State of Idaho	ID
Dale	Vitale	Senior Deputy Attorney General	National Association of Attorneys General	DC
Engelbrecht	Von Tiesenhausen	Board Member	Community Advisory Board for Nevada Test Site Programs	NV
Andrew	Wallo	Director EH-41	U.S. Department of Energy	DC
Robert	Warther	Manager	USDOE/Ohio Field Office	
Neil	Weber	Director, Dept. of Environmental And Cultural Preservation	Pueblo of San Ildefonso/STGWG	NM
Evelyn	Wight		WPI	MD
David	Wilson		Department of Health and Environmental Control	SC
Michael	Wilson	Program Manager	Department of Ecology	WA
Thomas	Winston	Chief, Southwest District Office and Office of Federal Facilities Oversight	Ohio Environmental Protection Agency	OH
Phillip	Wong	Program Manager	U.S. Department of Energy	CA
Jim	Woolford	Director, Federal Facilities Restoration and Reuse Office	US EPA	DC
Louis	Zeller	Research Director	BREDL, Inc.	NC
Jerry	Boese	Senior Associate	Ross & Associates Environmental Consulting, Ltd.	WA
Telita	Campbell	Administrative Coordinator	NGA Center for Best Practices	DC
Kara	Colton	Senior Policy Analyst	NGA Center for Best Practices	DC
Elijah	Levitt		Ross & Associates	WA

APPENDIX B. BREAK-OUT GROUP REPORTS:

Workshop participants were randomly assigned to break-out groups, with consideration given to achieving a balance of interests and organizations in each group. The goal of the break-out groups was to identify factors that are important in evaluating RBES and ways to measure them. Each group generated ideas on criteria that they believe are important to measure or indicate performance in alternative end states and variances and outlined suggestions for making the RBES process more effective. The presentations of each of the Break-out Groups are attached.

Yellow Group

RBES Workshop: October 6-7

Vision Process

- Periodic Review based on changes in any decision factors (technology, health effects, land use)
- On-going Dialogue about how to make site an asset to the community
- Continued discussion to build consensus on end use

Vision Process

- Bring everyone to the table at the site level
- Develop consensus about End Use Vision
- Identify the “show stoppers” and take them off the menu
 - Does the timing make sense?
 - Does it have community acceptance?
 - Does it pass a subjective Cost-Benefit check?
 - Does it pass a regulatory gut check?
 - Does it open Pandora’s box / unravel the fabric?
 - Does it have political support?

Vision Process

- Identify places where risks aren’t addressed or can be addressed better



(1) Things that can be handled within existing regulatory framework

MOVE AHEAD

(2) Things that require a fundamental change in approach

APPLY CRITERIA AND/OR

**COMMENCE A NATIONAL DIALOGUE
w/STAKEHOLDERS**

CRITERIA

- Benefits/Value Added
- Opportunity to Enhance Cleanup
- Timing / Where the process stands
- Tribal Treaty Rights/ Risk Assessment
- Sustainability & LR Mgmt Goals
- Robust LT Stewardship
- Consistency
- Stability of site's future mission
- Compliance with "spirit of the law" in addition to the law
- Reliance on regulatory policy
- Technology readiness
- Consideration of Trade-offs to enhance the overall end state
- Does end state support the end use?
- Environmental Justice Impacts
- Worker Impacts
- ST Vs LT Risk
- Security of Transportation
- Practicality
- Financial Strategy / Plan that supports the cleanup in the ST & LT
- Site Land use/ Exposure
- Point of Compliance/Groundwater
- Holistic Approach

Things that Need Clarification

- What is joint understanding of Stewardship/sustainability
- Understanding what DOE is going to do to secure LT sustainability
- Definition of Risk
- What is the status of NNSA's at the end of EM's role?

Blue breakout group

RBES

- PERCEIVED as outside the regulatory process
- DOE views RBES as within regulatory process
- Dialogue needed to fix this
 - Regulators to DOE
 - DOE to regulators and others

Criteria for winnowing

- Group reviewed the CERCLA criteria
 - Noted that ARARs are threshold criteria
- Additional criteria
 - Pursue variances only if NEW INFORMATION is available (applies to cases where there is a signed ROD).
 - Don't pursue **just** "easy" variances
 - Focus on variances where clarity on alternative end states does not exist with public and regulators
 - Focus on discussions about variances are needed to move forward with cleanup and closure.

The Path Forward

- Direct DOE sites to develop, with the public and regulators, a **site-specific process** for moving forward with RBES, including definition of DOE's outreach process.
 - Recognizes every site is different
- DOE would take input received to date and identify which variances it would like to work on, using the agreed-upon site-specific process. Ensure DOE, regulators, and public agree on alternatives to be considered.

Path Forward, continued

- Initiate a national dialogue on selected issues that are currently difficult to deal with on a site-specific basis:
 - Groundwater
 - Point of compliance
 - Institutional controls
 - Long-term stewardship
 - Waste Management (incl, “orphan” waste)
 - Although not an RBES issue per se, this could have an impact on implementing RBES.

3rd Party Review

- Considerable discussion in group
- “validation” is an issue
- Some concerned about 3rd party review appearing to be another approval hoop, or otherwise being in a management (or fiduciary) role.
- “Technical assistance – advisory only” seems to solve disagreement

Additional comments

- Make sure to keep a site-wide framework
- Need for transparency
 - DOE needs to clarify its goals
 - “motives lurking that are not visible”
- Identify areas of agreement

RED

End State Dialogue

General Recommendations on Direction

- **Public Participation**
 - History of collaboration at sites
 - National policy
 - Ample time
 - Inclusion
- **Define the whole process upfront and make it clear**
 - Dialogue
 - Regulatory process is starting point
 - Transparency and Openness with information
 - Focus on End State and know where you are heading

General Recommendations on Direction

- Modify the language for clarity
 - End Use Based End States
 - Alternatives
- End States is a tool that can be used to educate Congress/OMB

Process Recommendations

- Involve the public and governmental entities
 - Early, often and locally
- Clarify and re-calibrate the process
- Emphasize that risk is only the beginning of the process
- Understand the limitations of parties DOE is working with at the site
 - Can't review all portions of the sites meaningfully with regulators
 - Eliminate obviously flawed alternatives (variance) early

Process Recommendations

- Create national criteria that are developed through a process
- Review of cleanup/end states should be updated regularly
- FFERDC/NCP (CERCLA)/Work Shop Examples
 - Capture all important Criteria

Evaluation Criteria

- All criteria are important
- Balance all criteria
- Allow for flexibility
- National Criteria and local criteria
 - Each site is different
- HH and Environment
- Top Criteria Raised
 - Worker Safety
 - Community Acceptance and Community Safety
 - Regulatory Acceptance
 - Long-term protectiveness of remedy (LTS/ICs)
- Cost and Time was important but not at top of list for most people.

Green Group

3 Basic Topics

- ◆ What problem is RBES trying to solve and does the group agree it is a problem/challenge/opportunity?
- ◆ If a problem, what is the right tool to address?
- ◆ Criteria Issue

Current Problem

Fully agree there is a problem/opportunity

3 Problems/Opportunities:

- ◆ Easy to look at some clean-up plans and declare parts not science-based, inconsistent, or unclear. (PERCEPTION ISSUE AND/OR REAL PROBLEMS)
- ◆ Some plans are not integrated on a site base. No end use in mind. No clear strategic direction.
- ◆ Need for innovation. Right thing to do. New information.

Tools/Ideas to Solve

- ◆ Current process of RBES has been useful to ID problems.
- ◆ Recommend refocus effort a bit at this point
- ◆ Have HQers (with input from others) review Vision Documents and draw out lessons learned and common problems.
- ◆ Sites (tailor process)
 - use this information to go back and have a discussion with their communities.
 - Where stakeholder agreement of a real problem—use available tools. (reopen remedies, etc.)
 - Systematic review process

Tools/Solutions

Common themes already known:

- ◆ Long term stewardship
- ◆ Point of Compliance
- ◆ Ground water
- ◆ Future land Use
- ◆ Waste Disposition
- ◆ Risk Communication/Management

Sites could use national policy direction on these key issues.
National policy dialogues—provide field managers policy guidance

Tools/Solutions

- ◆ Need to operate with more transparency
- ◆ Communication Plan
 - Communicate success to Congress(stakeholders will help)
 - DOE communicate business plan and strategic approach to their field offices, states, etc.
- ◆ EMS
 - Provide information to Sites, states, other stakeholders

APPENDIX C. *The Final Report of the Federal Facilities Environmental Restoration Dialogue Committee: Consensus Precipices And Recommendations For Improving Federal Facilities Cleanup.* Excerpt from Chapter 5—Funding and Priority Setting

Regardless of whether protection of human health or the environment (or both) is the starting point for establishing cleanup funding priorities, the Committee affirms that numerous other factors must be considered in setting priorities for sites and projects. As set forth in Principle 9 in chapter 2 the factors listed below should be considered in setting cleanup priorities:

- a) cultural, social, and economic factors, including environmental justice considerations;
- b) potential or future use of the facility, its effect on the local communities' economy, vitality, livability, and environmental quality;
- c) the ecological impacts of the contamination and the proposed action to address it (in those instances where protection of the environment is not used as a primary basis for establishing cleanup funding priorities);
- d) intrinsic and future value of affected resources (e.g., groundwater and fisheries);
- e) pragmatic considerations such as availability and continuity of skilled workers, labs, cleanup contractors to complete the activity or the feasibility of carrying out the activity in relation to other activities at the facility (i.e., capacity and work flow logic), or both;
- f) the overall cost and cost effectiveness of a proposed activity and especially the relative risk reduction value obtained by the proposed expenditure;
- g) making land available for other uses, recognizing that land uses may change over time;
- h) the importance of reducing infrastructure costs (e.g., \$300 million is spent each year to monitor tanks at Hanford and \$130 million is spent each year at Rocky Flats to safeguard special nuclear material);
- i) the availability of new or innovative technologies that might accelerate or improve the ability to achieve a permanent remedy;
- j) Native American treaties, statutory rights (e.g., American Indian Religious Freedom Act), and trust responsibilities;
- k) regulatory requirements and the acceptability of the proposed action to regulators and other stakeholders;
- l) supporting accomplishment of other high priority agency objectives;
- m) life-cycle costs; and
- n) actual and anticipated funding levels (the congressional budget appropriation, OMB apportionment, allotments of funds to agencies or departments and the facilities, and out year funding targets).

With regard to anticipated funding levels, the Committee recognizes the constraints on federal agencies to submit budget within OMB target levels, and also recognizes that there may be circumstances that warrant challenging those constraints.

The Committee believes that there is no widely accepted mechanism for integrating human health and environmental risk with other important factors. However, the Committee recommends, for a risk plus other factors prioritization system to work, the following conditions must be met:

For the prioritization of cleanup actions or studies, the application of standards to remedy selection and the actual selection of remedies should occur independent of the risk ranking. That is, prioritization should only relate to the timing of the action, not how protective the remedy will be.

There must be confidence, among all stakeholders, in the approach for categorizing sites based on relative risk and, similarly, the risk reduction potential of proposed cleanup activities.

There should also be confidence, among all stakeholders, in the methodology used to assign priorities once risk rankings are made.

As part of priority setting, the general range of costs associated with a cleanup activity should be known and generally agreed upon.

The system of assigning risk levels and setting priorities should be transparent and easily understood. That is, it should not only be understood by "experts" and others who are fully immersed in the process, but by members of the public, the press, and elected officials.

While the Committee believes that agencies should issue general guidance on the types of factors to be considered and how they should be applied to priority setting, ultimately, these agencies, in consultation with public stakeholders at each facility, must decide the mix and relative importance of these factors in setting priorities. Each agency should ensure that its approach is understood and utilized within the agency, by regulators and public stakeholders, and by all facilities in a similar manner to provide for comparability among facilities. In many cases, the best way to ensure that everyone is playing by the rules is to review or evaluate rankings after they are made but before funding allocation decisions are made.

In short, the Committee does not believe there is a single best methodology for applying the factors outlined above. Rather, regulating and regulated agencies and public stakeholders at facilities must determine what approach will work best for them.

The Committee does recommend, where possible, agencies and other stakeholders should define, up front, the factors in addition to protection of human health and/or environment that might influence priority setting. Then, when priorities are set, participants in the process should identify which specific factor or factors have caused a site or activity to be assigned a priority category. Participants in the decision-making process might also consider whether each factor moves or "bumps" activities from one priority level to the next level, or are so significant that they "trump" the risk determination.

The evaluation of risk and the establishment of temporal priorities is a dynamic process. Both risk rankings and priorities should be reviewed regularly by all participants, to take into account new information and even new attitudes and perspectives.

Each regulated agency should establish, in consultation with other stakeholders, procedures for reopening rankings and priorities outside of the normal budget cycle, should significant new information be discovered.

No matter what specific prioritization scheme an agency adopts, its success depends upon agreement on the process, up front, by all stakeholders. If there is broad confidence in the process, then cleanup progress will be much less subject to delays and other transactional costs historically characteristic of major federal facility cleanup projects.

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Attachment 15

PUBLIC AND STAKEHOLDER COMMENTS RECEIVED IN WRITING

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Dollins, David W

From: Dollins, David W
Sent: Wednesday, February 18, 2004 10:12 AM
To: 'rachel.blumenfe@lex.doe.gov'
Cc: Morgan, John W
Subject: Comments on RBES

FYI

>> -----Original Message-----
>> From: Young,Ralph S
>> Sent: Tuesday, February 03, 2004 1:20 PM
>> To: 'cookgn@bjllc.org'
>> Cc: 'youngrs@vci.net'
>> Subject: Question for DOE Public Meeting - February 5, 2004
>>
>> Greg:
>>
>> Here's my question for DOE concerning the discussion of the "Risk-Based
> End State Vision" document.
>>
>> "Has DOE considered the use of microbes for in-situ bio-remediation of
> chlorinated compounds?" Over the last 15 years, researchers have made a
> lot of progress in this area and there are many demonstration projects in
> progress across the US. Here's a link to one of the leading researchers
> in the field, Dr. Jim Gossett:
>>
>>
> [http://www.cee.cornell.edu/faculty/info.cfm?abbrev=faculty&shorttitle=rese
> arch&netid=JMG18](http://www.cee.cornell.edu/faculty/info.cfm?abbrev=faculty&shorttitle=research&netid=JMG18)
>>
>> I think this technology might be feasible to apply in those areas where
> the pump and treat technology has been less effective.
>>
>> I'm planning to attend the meeting Thursday, but in case I get held up,
> I wanted to enter this question into the public record, so that I could
> get an answer.
>>
>> Thanks
>>
>> Ralph Young
>> Environmental Manager
>> Air Products and Chemicals
>> Calvert City, KY 42029
>
> +

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Dollins, David W

From: Dollins, David W
Sent: Wednesday, February 18, 2004 10:14 AM
To: 'rachel.blumenfe@lex.doe.gov'
Cc: Morgan, John W
Subject: Comments on RBES from John Anderson (PACRO)

FYI

-----Original Message-----

From: JohnL.Anderson@mail.state.ky.us
[mailto:JohnL.Anderson@mail.state.ky.us]
Sent: Wednesday, February 18, 2004 9:16 AM
To: dollinsdw@oro.doe.gov
Cc: sdoo@co.mccracken.ky.us
Subject: Comments for February 5 Meeting on End State

1. PACRO supports the development process being used for Risk Based End State.
2. PACRO supports the Industrial land use for areas currently viewed as industrial.
3. PACRO supports more flexibility in the designation of use for the remaining DOE property other than exclusively recreational. PACRO supports the ownership of that property being transferred to a local industrial development agency that upon clean up to recreational standards has the flexibility to reuse portions of that property for re industrialization.

John Anderson
PACRO Director
1002 Medical Drive
P.O Box 588
Mayfield, KY 42066
Phone: 270-251-6119
Fax: 270-251-6110
E-mail: johnl.anderson@mail.state.ky.us

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FISH & WILDLIFE COMMISSION

Mike Boatwright, Paducah
 Tom Baker, Bowling Green
 Allen K. Gailor, Louisville
 Ron Southall, Elizabethtown
 Dr. James R. Rich, Taylor Mill, Chairman
 Ben Frank Brown, Richmond
 Doug Hensley, Hazard
 Dr. Robert C. Webb, Grayson
 David H. Godby, Somerset



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF FISH AND WILDLIFE RESOURCES
 C. Thomas Bennett, Commissioner

 February 19, 2004

David Dollins
 U.S. Department of Energy
 Paducah Operations Oversight Group
 P.O. Box 1410
 Paducah, KY 42002

Re: Risk Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky; DOE/OR/07-2119&D0/R2

Dear Mr. Dollins:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has reviewed the Risk Based End State (RBES) Vision and Variance Report for the Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky. Due to the available format and time restraints for the comment period, KDFWR respectfully offers the following initial comments for consideration. Further comments may be deemed necessary after additional review of the entire document, and subsequent documents pertaining to this topic.

Section 3.2.1 - The Ecological Activities Section states that vegetation is managed for consumption by wildlife, especially deer. While the vegetative management practices on West Kentucky Wildlife Management Area (WKWMA) do benefit most wildlife, upland habitat is managed more so for the northern bobwhite (*Colinus virginianus*) and should replace deer as the inferred primarily managed species.

Figure 3.3b - Site Legal Ownership- RBES. This figure indicates land currently leased to WKWMA will continue to be leased to KDFWR, not decided to the state. While the current lease agreement would remain adequate, KDFWR would be interested in obtaining ownership of the property if the area meets or exceeds state and/or federally issued criteria for cleanup for recreational use.

V-1.1, 6.1, 9.1 - The Current Planned End State (CPES) continues the PGDP water policy. The RBES assumes the use of enhanced institutional controls. KDFWR feels both of these actions are potentially inadequate in monitoring and remediating potential ecological risk to off site receptors. KDFWR feels that a more aggressive groundwater monitoring and cleanup regiment should be initiated under D&D of the plant.



Arnold L. Mitchell Building

#1 Game Farm Road

Frankfort, KY 40601

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It is unclear as to the mechanism for enhanced institutional controls for non-DOE and DOE owned property. Will this involve deed restriction or similar legal arrangement for non-DOE owned properties?

V- 1.2, 9.3 – The CPES uses a DNAPL source reduction by using heating technologies. The RBES does not include any active reduction of contaminants. Since there would be limited control of groundwater movement to off-site area, KDFWR feels that monitoring the natural attenuation of groundwater would inadequately address the issue of groundwater contamination. KDFWR advocates the proactive stance of attempting to decontaminate the groundwater along with continued monitoring. Risks under the RBES would include the mentioned risk to samplers, but should also include ecological risk and potential risk to recreational users due to the potential for groundwater to return to the surface, thus making a completed pathway to workers and recreational users, as well as ecological receptors.

V- 1.3 - The CPES assumes excavation of burial grounds. The RBES assumes capping and monitoring of the burial grounds. With limited control of groundwater movement to off-site areas, KDFWR feels that capping and monitoring the natural attenuation of groundwater contaminants from the burial grounds is inadequate to address the potential impact these contaminants may have on ecological and human receptors. With no control of current or future rates of contamination into the groundwater, a non-removal activity poses a potential risk to both human and ecological receptors. While the short-term risk to workers, public, ecological receptors using the RBES may be reduced; long-term risk to all three may be much higher with a non-removal plan of action. KDFWR feels that adequate risk assessments, including ecological risk assessments, should be completed for each scenario to determine the best plan of action for the burial grounds site.

V-1.4- The CPES assumes implementation of oxidation technologies to remove trichloroethene (TCE) and other solvents from the phase plume. The RBES does not actively remove contaminants and only monitors natural attenuation. With limited control of groundwater movement to off-site areas, KDFWR feels that monitoring natural attenuation of groundwater contaminants from the dissolved phase plume is inadequate to address the potential impact these contaminants may have on ecological receptors. With no control of current or future rates of contamination into the groundwater, a non-removal plan poses a potential risk to both human and ecological receptors. KDFWR feels that adequate risk assessments, including ecological risk assessments, should be completed for each scenario to determine the best plan of action for the burial grounds site. It appears from the provided map that the TCE plume extends well beyond the property boundaries onto both private and state owned property.

V-1.5 - The CPES recommends active removal to reduce solvent concentrations in groundwater discharge into Little Bayou Creek. RBES does not allow for active cleanup and would only monitor concentrations at the discharge point. KDFWR feels that this action would not be appropriate as contaminated water from the Little Bayou Creek leaves the area and may pose risk to ecological receptors within Little Bayou, Big Bayou, and eventually the Ohio River. Active remediation may be necessary to reduce these potential risk to the levels required by the state.

V-2.1 - The CPES recommends removal of contaminated source sediments and soils to achieve a target risk of 1E-06. The RBES assumes excavation of hotspots in sediment and soil using a target risk and PCB concentration consistent with future land use. The RBES action in industrial areas would achieve a target risk of 1E-04 to a worker and a PCB concentration of 25 ppm. The action in recreational areas would achieve a target risk of 1E-04 to a recreational user and a PCB concentration of 1 ppm. KDFWR

feels that the RBES does not adequately remove contamination from either on site or off site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels being left are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils and sediments.

The list of variances states, "The magnitude of these risks under the CPES and RBES have not been assessed at this time; however, because a greater amount of material would be excavated under the CPES than under the RBES, risks to all receptors would be expected to be greater under the CPES than under the RBES." KDFWR feels this may or may not be true based on the lack of information that has been obtained regarding both plans of action. We feel ecological and human health risk assessments should be performed to determine what potential impacts each action may have. By controlling sediment/soil migration during cleanup activities, potential movement, both onsite and offsite, can be adequately controlled.

V-2.2 - The CPES recommends the construction of 2 basins to control sediment migration into areas outside of the industrialized portions of the site. Under RBES, no such basins would be planned because hot spot removal would prevent migration of contaminated material. KDFWR feels an ecological risk assessment should be performed to determine what impacts the RBES may have on off site receptors. As stated above, the proposed levels of contamination to be left by the RBES are higher than current state levels for both industrial and residential scenarios. Habitat destruction could be kept to a minimum in the construction of sediment basins. Properly choosing site locations for the basins may reduce impact from habitat destruction by constructing the basins in what is currently a poor habitat.

V-3.1- Under the CPES certain burial grounds are to be excavated and disposed of in an offsite area. Under the RBES, the burial grounds would be capped and monitored. KDFWR believes that there has not been adequate characterization of the contaminants. KDFWR also feels that potential off site contamination may occur from the burial grounds and more site and risk characterizations should be completed to determine what affect leaving the material in the ground may have to both ecological and human receptors.

V-4.1, 8.1, 9.2 - The CPES assumes excavation of contaminated soils to achieve the target risk of 1E-06 under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavation of hot spots in soil using a target risk of 1E-04 under a worker scenario with concentrations of PCBs 25 ppm. KDFWR feels that the RBES does not adequately remove contamination from either on site or off site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils and sediments.

V-5.1 - The CPES does not include the potential construction of a CERCLA Cell for on-site disposal of CERCLA-derived wastes. The RCBS includes the potential construction of the facility. KDFWR believes that a more detailed study should be conducted to determine the feasibility of a CERCLA Cell onsite. This study should address the concerns put forth by the Commonwealth of Kentucky.

V- 7.1 - Both the CPES and RBES allow for removal of waste and debris within the legacy waste storage areas. The CPES is covered under an agreed order stating the final closure of the sites must achieve a Hazard Index (HI) of 1 and a 1E-06 for closure without the use of engineering barriers or institutional controls. The RBES excavated soils or surface areas would target areas to a HI of 1 and 1E-04 under an industrial scenario with PCB target levels at 25 ppm. KDFWR feels that the RBES does not adequately remove contamination from on site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils under the agreed order.

There appears to be a misprint in the figure legend. It shows red points having PCB levels below 25 ppm. When compared to the other two point levels, this should actually read PCB above 25 ppm.

KDFWR appreciates the opportunity to comment on this issue. If you or your agency has any questions or requires additional information, please contact Brad Pendley at 502/564-7109, ext. 366 or via email at brad.pendley@ky.gov.

Sincerely,



C. Tom Bennett
Commissioner

CTB/BEP/kh

cc: Edwin F. Crowell, Asst. Director, Division of Fisheries
Pat Brandon, Purchase Wildlife Regional Supervisor
Tim Kreher, WKWMA Manager
Tuss Taylor, KY Department of Environmental Protection
Gaye Brewer, KY Department of Environmental Protection
John Maybriar, KY Department of Environmental Protection
Environmental Section Files

PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

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(Kentucky)

DOE Federal Coordinator

David Dollins

*Additional information
about contacting board
members directly can be
obtained from the CAB
web site or by contacting
the board at
(270) 554-3004.*

February 23, 2004

Mr. William Murphie
Portsmouth/Paducah Project Office
U.S. Department of Energy
1017 Majestic Drive
Lexington, KY 40513

Subject: Risk-Based End State Vision and Variance Report Comments Prepared by the Paducah Gaseous Diffusion Plant (PGDP) Citizens Advisory Board (CAB)

Dear Mr. Murphie:

The PGDP CAB has prepared comments, based on discussion held at the February Board meeting, for the *Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-2119&D0/R2)*

The Board advises that the following comments be considered:

- The CAB has been informed that the Department's Risk-Based End States Strategy Document is not a decision document. Since this document includes cleanup alternatives for the PGDP, the Board is concerned that it will become a decision document, without public input.
- The Board also feels the timeline of this document is too aggressive and does not allow adequate time for review, due to the complexity of it's content.

These comments were submitted to David Dollins via email on February 20, 2004 to ensure that they will be addressed at the workshop scheduled for February 26, 2004. We look forward to discussing these concerns further at the upcoming workshop. Your consideration of these comments would be greatly appreciated.

Sincerely,



Bill Tanner, Chair
PGDP Citizens Advisory Board

BT:kp
LTR-PAD/CAB-LL-04-0020

c: Distribution

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February 23, 2004

Dave Dollins
Paducah Operations Oversight Group
United States Department of Energy
P.O. Box 1410
Paducah, KY 42002

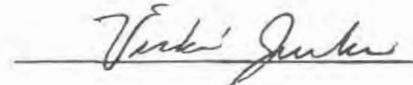
Public Comment in the matter of:
Draft Risk-Based End State Vision and Variance Report for the Paducah Gaseous
Diffusion Plant, Paducah, Kentucky (DOE/OR/07-2119&DO/R2-Secondary Document)

Comment Period Ends:
February 20, 2004 (extended)

Please include the following comments as part of the permanent file.

Charles Jurka
RT 3, Box 265A
Golconda, IL 62938

Vicki Jurka
RT 3, Box 265A
Golconda, IL 62938



Comments:

The landowners, through the PGDP Water Policy, have entered into an agreement to abandon the use of groundwater while purchasing municipal water at DOE's expense. This agreement has a five-year life with variable renewal options. Since its inception, with one exception (landowner refusal), this removal action has performed effectively; meeting the goal of reducing "risks to residents, from exposure to" contaminated "groundwater."

Under the risk-based end state proposal "enhanced institutional controls.. would supersede (annul or replace) the current PGDP Water Policy." One of the proposed institutional controls takes the form of a legal agreement; placing "enforceable restrictions on groundwater." This type of legal agreement would be limited in duration through the law of perpetuity as well as subject to legal interpretation. Another proposal calls for the acquisition "of rights from surrounding property owners and directly implements (ing) restrictions on groundwater and property use." This proposal enjoins the property owner to abstain from using their groundwater and/or property in exchange for an undetermined sum of money. Under the principles of mutual benefit both parties would automatically benefit from this buyer/seller agreement. But through this approach, the landowner realizes a lesser, more undesirable, benefit when relinquishing not only property right but municipal water payments as well.

DOE and its contractors contaminated the landowners groundwater; destroying a self-sufficient economical option for landowner water-production. DOE then ameliorated this harm, through the Water Policy, by paying the costs associated with a new source of "clean" water. The extensive and expansive degree of groundwater contamination, under the current proposed remedial actions, will remain for many generations to come. In all likelihood, legal instruments will not bridge this generational span. The inherent failures of both current and risk-based proposals necessitates the exploration of other options. The most

fail-safe, long-range, cost-effective option is the purchase and subsequent DOE control of "realestate" from all Water Policy landowners.

Pages 143-147: Hazard 1, V-1.2 through V-1.5: This draft document makes claims that the only "variance in risk between the current planned end state and the RBES is the amount of time necessary to achieve MCLs." We disagree. The decision making process (scope, cost, schedule, etc.) fails to consider the progression of the currently identified groundwater plumes and the potential impact on landowners, residing outside the Water Policy boundaries, who still rely on groundwater sources. It also fails to address the importance of the element of time respecting the migration of unremediated contaminants beyond current Water Policy boundaries and/or into the deeper aquifer (McNairy). It should be apparent that the proposed institutional controls will not ameliorate the risk for future generations.

Barriers:

- * (143) We endorse the regulators position for "source actions to reduce contaminant concentrations."
- * (143) We reject "technical impracticability waivers."
- * (144) We disagree with calling the fence line "point of exposure." It would be better identified as the source of all exposures.
- * (144-5) After 50 years of dumping by DOE and its contractors, source actions are necessary.

Page 148: Hazard 2, V-2.1: The RBES fails to consider the hazard posed from eating "ecological receptors" after they have been exposed to long-lived PCBs in their environment.

Page 150: Hazard 3, V-3.1: Burial grounds are inconsistent with re-industrialization.

Pages 40 and 142 through 159: Hazard 5: Hazard area 5 includes closed and operating landfills. There are three (P), not two, closed landfills in this industrialized landfill area. These landfills are leaking. They are closer to the residential receptor than any other PGDP/DOE facility. They sit atop a seismically active area. By their very nature, they pose both current and future risk. The operating landfill (C-746-U) is the primary disposal option for legacy waste, in storage at DMSAs, at PGDP. The potential for future expansion of this landfill is great: ongoing EM, proposed D&D, as well as DUF-6 conversion activities drive this concern. These landfills are a contentious community issue. "Table 5.1 Variance Report by Hazard Area" completely ignores these hazards.

Page 12 (para. above 2.1.2): This paragraph requires clarification.

Page 44 (risk levels): Fig.4.1a2 is referenced but does not appear in this draft document (our copy). This appears to be an important reference when determining exposure pathways.

Page 1: "Once finalized, this report will provide information that can be used to establish clearly articulated and technically achievable cleanup goals for

PGDP..." It is our hope that the final document will achieve these goals; as the draft document fails miserably.

Generally:

- * This draft document fails to address radiological risk.
- * Anticipated recreational use for areas outside the fence is inconsistent with a McCracken County zoning ordinance .
- * This draft document makes contradictory statements (eg: pg ES-3, 1st set * #3, 2nd set *#7, off-site/on-site disposal).
- * During D&D the NE plume treatment system may be dismantled/removed (pg.5).
- * 24% of the population living around PGDP still rely on groundwater (pg.27)
- * The timeline for this document, including but not limited to production, notification, availability, and review, was insufficient. This hurried approach generated a poorly prepared document containing many errors (including noticeable omissions).
- * The intended use of this document is poorly understood by the public and others; DOE calls it a "living document" with a fast approaching "final" version due date.

Thank you

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Dollins, David W

From: Mark Donham [markkris@earthlink.net]
Sent: Monday, February 23, 2004 2:55 PM
To: Dollins, David W
Cc: Kristi Hanson; Craig Rhodes; merryman@apex.net; gwaldrop@comcast.net; rlamb@apex.net; tillsojd@apci.com
Subject: Risk Based End states

Dave Dollins,
Paducah DOE

Dear Dave,

These are the comments of the Coalition for Nuclear Justice (CNJ), which is a project of the Regional Association of Concerned Environmentalists (RACE), a grassroots environmental organization from Southern Illinois and Western Kentucky, active in the area since 1985. RACE has members from the region surrounding the Paducah Gaseous Diffusion Plant (PGDP) that would be adversely impacted by environmentally unsound activities occurring at the facility.

We have some real problems with the Risk Based End states program and site specific plans for Paducah. The RBES process has been flawed from the beginning. It is based on the secretive "Top to Bottom Review" and the agreements with the various states were > done mostly behind closed doors. We even worked through the CAB and had 4 different consensus occasions when we were involved that asked to be involved in all of this process - but this was just ignored. Now that they you developed these specific

> > plans, it is put out for a quick comment period with an unrealistic turnaround period. This is bogus public participation and shows a continued contempt for the public's concerns

> here and across the DOE complex. As far as the specific variances go, our > > comments follow each of the variances contained in the ***** below. We use your contractor's own words as the basis for what we comment on.

> > > <http://www.bechteljacobs.com/pdf/pad/rbesv/chapter5.pdf>

> > >

> > > 5.2 VARIANCES BETWEEN CURRENT PLANNED END STATE AND RBES

> > >

> > > This section presents tables identifying the variances between the > current planned end state and the RBES. As noted earlier, the first table (Table 5.1) identifies variances within a given hazard area, and the second table (Table 5.2) identifies

> > > variances over hazard areas. When combined over hazard areas, the > relative importance of each of the variances, as indicated by the number of

> hazard areas affected, are as follows: (In this list, the current planned end

> > state action is listed first and the RBES action is listed second. Also, note

> > that the cost, schedule, and risk discussions do not appear in Table 5.2 > > because these discussions are hazard area specific.)

> > >

> > > · Variance 6 (V-6): Cleanup levels for soil and sediment in industrial > > areas set at targets of 1E-06(residential) and PCBs of 1 ppm versus targets of

> > > 1E-04 (industrial) and PCBs of 25 ppm; Cleanup levels for sediment in

> > > recreational areas set at targets of 1E-06 (residential) and PCBs of 1 > ppm

> > > versus targets of 1E-04 (recreational) and PCBs of 1 ppm - Hazard

Areas

> 2, 4, 8, and 9.

>> *****We oppose a blanket relaxing of the cleanup standards for pcbs.

>> This will results in many pounds of pcbs being left on site - 25 times

> more to be exact. PCBs have been found in higher than average levels in

>> virtually every living creature that has been tested around the plant.

> This means they likely are in the workers also, in the dust, in the water.

> There needs to be diligence in trying to reduce the pcb exposure to the ecology

> of the area.

>> In addition, this does not address the private lands which have or may

>> have been contaminated by the plant. Any comprehensive cleanup plan

> should deal with contaminated private lands.*****

>>

>>>

>>> · Variance 1 (V-1): Continuation of PGDP Water Policy versus Enhanced

>>> institutional controls -Hazard Areas 1, 6, and 9

>> *****The DOE should not try to use the water policy as a political tool.

>> Water should be supplied to those in the water policy separate from any

>> other considerations. Adequate monitoring should occur in order to

>> determine if the plume is spreading. With natural attenuation as the new

>> cleanup plan, it is likely that the water policy area will expand over

>> time.*****

>>

Variance 2 (V-2): Treatment of groundwater source areas versus

> monitored

>>> natural attenuation -Hazard Areas 1 and 9.

>> *****This addresses Variance 2 - 4, as they all relate to

>> groundwater/source cleanup. This is a huge step back from the original

>> commitments to clean up the groundwater. We know that the plume both

>> enters the river underground and that it bubbles up in springs close to

>> the river and enters the creeks, and then into the river. We have little

>> knowledge of how it actually enters the river underground, or how it might

>> come up during flooded conditions. However, it has certainly been shown to be

>> entering the river. If it is allowed to go on by natural attenuation,

> this will go on forever, practically. The one thing that always the CAB agreed

>> on was that removing the contamination sources should be the highest

>> priority. We agreed with that also. The idea of walking away from this groundwater plume and not cleaning up the sources is of such magnitude that it is hard to believe that the

> agency has properly thought this out. For example, won't this cause the plume to expand

> to an even wider area than it current occupies? How could it not? What

> about the areas where it bubbles to the surface? What are the long term impacts

>> of this? Shouldn't there be an Environmental Impact Statement done on this proposal?

>> We also want to know where US EPA stands on this, and whether or not

> this complies with CERCLA.*****

>>>

>>> · Variance 3 (V-3): Excavation of groundwater source areas versus

>> monitored natural attenuation Hazard Area 1.

>> *****See response to Variance 2.*****

>>>

>>> · Variance 4 (V-4): Treatment for the dissolved phase plume versus

>> monitored natural attenuation -Hazard Area 1.

>> *****See response to Variance 2.*****

>>>

>>> · Variance 5 (V-5): Actions to reduce surface water discharges versus

> > continued monitoring - Hazard Area 1.
> > *****Again, walking away from the commitment to try to reduce surface
> water discharges is a significant backtracking on the cleanup. This has
> > implications for neighboring properties, wildlife, recreationalists, and
> the ecology. There will also be cumulative impacts on the discharges
going
> into the creeks and then into the river. This also poses a incremental
> increase in the risk of re-contamination or cross contamination during or
after
> some cleanup action has occurred. Again, the ultimate result of this is
that
> > more contamination will be left on site. With plans to leave the major
> > source areas and to reduce the cleanup standards, the site will be far
> from clean after DOE declares the cleanup over. *****

> >
> > >
> > > Variance 7 (V-7): Construction of sediment control basins versus no
> > > construction - Hazard Area 2.
> > *****We are not a huge fans of the larger sediment control basins,
because
> we believe they have a potential for becoming another source of
groundwater contamination. The key is to reduce the contamination going
into the watershed - not trying to catch it once it has entered the water.
At that point the damage has been done and
> > it is much more difficult to capture the contaminant. So the focus
should
> > be on stopping the contaminants from entering the watershed, in our
> opinion. *****

> > >
Variance 8 (V-8): Excavation of burial grounds versus capping of
> burial grounds - Hazard Area 3.
> >
*****This is a cost cutting item that DOE has been trying to get into
> > their cleanup plans for many years. There are many hundreds of tons of
> > uranium buried in unlined trenches at the site, having been placed in
> > barrels with PCB oils due to the pyrophoric nature of the uranium at
> issue. (notwithstanding the fact that the CAB was falsely told that the
uranium was covered by peanut oil) There has been some testing of these
trenches, and there is indication
> that barrels are deteriorating, and that some of the trenches penetrate
into
> the water table and the barrels are sitting in water. To cap and leave
this would be a disaster in the making. It is so likely that this area is a
source of
> > groundwater contamination that it makes no sense to wait to dig the
stuff
> > up. Besides, we never thought that the monitoring around the burial
> grounds was adequate to detect leaks. Like Dr. Peter Montague says,
capping an
> unlined landfill is like putting a lid on a leaking bucket. It does no
> good*****

> > >
Variance 9 (V-9): Construction of potential CERCLA Cell versus no
> > > construction - Hazard Area 5.
> > *****We are not in favor of the CERCLA cell. However, we fear that
this
> > variance is being used as a way to only shift plans for dumping to the
> 746U landfill, which we are not in favor of either. We do not think that
the
> > Paducah site is a good landfill site for such long lived contaminants
> being so close to a major river. We think the idea of using some of the
existing
> > buildings as containment facilities should be looked at more, but that
the

>> focus should be on better quality containment facilities for the
>> contaminants. What needs to be done is that the contaminants need to be
>> removed from the open environment and contained in facilities that have
>> floors and the capability of observing leaks as soon as they occur with
> easy
>> remediation. If some of the existing buildings could be modified in
some
>> way to accomplish this, then that is certainly something to look at. If
> new facilities need to be built to adequately contain the contamination,
then
>> the agency should build them.*****>
>>>
>>
>> Variance 10: (V-10): Cleanup levels for soil and/or decontamination
of
>>> surfaces in industrial areas set at targets of 1E-06 (residential) and
>> PCBs of 1 ppm versus targets of 1E-04 (industrial) and PCBs of 25 ppm -
> Hazard Area 7.
>> *****We oppose a blanket relaxing of the cleanup standards for pcbs.
This
>> will results in many pounds of pcbs being left on site - 25 times more
to
> be exact. PCBs have been found in higher than average levels in virtually
>> every living creature that has been tested around the plant. This means
>> they likely are in the workers also, in the dust, in the water. There
> needs to be diligence in trying to reduce the pcb exposure to the ecology
of the
>> area.
>> In addition, this does not address the private lands which have or
may
>> have been contaminated by the plant. Any comprehensive cleanup plan
> should deal with contaminated private lands.*****

In summary, we see this RBES process as a publicly unfriendly (in violation of the site community relations play) ploy to allow DOE to walk away from its billion dollar commitments it has made in the past decade and half to adequately clean up the site. The public has for all intents and purposes been cut out of the process. There has been no environmental studies of this proposal, and we oppose it. If the DOE wants to amend its cleanup plans, it should start at the beginning and engage the public adequately, do proper environmental studies, and give a rational justification for its decisions. The RBES process has been just the opposite.

Mark Donham
Kristi Hanson
Coalition for Nuclear Justice
RR # 1, Box 308
Brookport, IL 62910
618-564-3367

>>
>>
>>
>>>
>>
>



Paducah-Area Community Reuse Organization
P. O. Box 588 - 1002 Medical Drive
Mayfield, Kentucky 42066
Phone: (270) 251-6119 - Fax: (270) 251-6110

March 11, 2004

MEMORANDUM

TO: Department of Energy

FROM: John Anderson, Director *ja*
Paducah-Area Community Reuse Organization
P.O Box 588
Mayfield, KY 42066

RE: Paducah Site End State Vision

1. BACKGROUND:

- A. The Paducah-Area Community Reuse Organization (PACRO) was formed in August of 1997 by regional community representatives from western Kentucky and southern Illinois in an effort to mitigate potential downsizing and restructuring of the Paducah Gaseous Diffusion Plant (PGDP) workforce as a result of the end of the Cold War and changing Department of Energy (DOE) priorities.
- B. Membership of the PACRO is designed to represent the counties in which the majority of the PGDP workforce lives. Thus, the PACRO impact area includes Ballard, Graves, McCracken and Marshall counties in western Kentucky and Massac County in southern Illinois. The PACRO implemented the following programs; Entrepreneurial Development; Existing Business and Industry; Industrial Parks and Spec Buildings; Workforce Reuse; and Facility Reuse.
- C. The current PGDP operator, USEC, has announced it was moving to Portsmouth, Ohio with a possible closure date of 2010.

2. ISSUE:

A path forward using the data/comments collected on the Draft End State Vision Document by DOE.

3. RECOMMENDATION:

- A. Select an internationally respected industry site selection firm and the completion of an Industrial Parks Master Plan for the 3,000 + acres of property currently owned by DOE in west McCracken County to perform all tasks of the Scope of Services listed below:
 - I. Evaluation of site selected by and completion of Phase II engineering including:
 - A. Identify and map utility locations and relocating to industrial park site.

- Electric
- Natural Gas
- Water
- Waste and wastewater
- Rail
- B. Environment
 - Wetlands
 - Historical and archeological
 - Hazardous waste
- C. Complete topography mapping project
- II. Community and economic assessment and planning
 - A. Projected capital cost
 - Cost of infrastructure development
 - Research potential grant and other funding sources for development and completion of industrial park
 - B. Comparable site analysis
 - Competitive assessment of competing “world class” industrial parks
 - Economic impact analysis of cost and benefits from estimated tax revenues generated by new jobs created.
 - C. Workforce assessment
 - Available workforce; skilled and unskilled
 - Available workforce training and retraining
- III. Land-use and development of land-use alternatives
 - A. Planning, design and development for master plan
 - Recommendations for efficient development process including incremental project steps to assure proper management and investment protection
 - Prepare concept land-use design plan, project phasing (if any)
 - B. Research and brand identification
 - Identify primary industry that will be the most likely occupants of the site
 - Branding, image, site name and market positioning of project

4. ADVANTAGE:

- A. This approach pioneers the most equitable way to arrive at a variable end state vision for the site. It allows the State Fish and Game, Citizens Advisory Board, as well as, other organizations in the community, like PACRO and GPEDC, with a mission to mitigate the downsizing of USEC, to speak with as close to a single voice as possible for an end state vision.
- B. To avoid any perceived favoritism, each participating entity should be offered an opportunity to fund a portion of the study.
- C. The results of this approach will be based on the industry location experience of the firm, as well as, the positions of the other community stake holders.

**To: Mr. Bill Murphie
Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, Kentucky 40513**

**Mr. Greg Bazzell
US Department of Energy
PGDP Site Office
P.O. Box 1410
Paducah, Kentucky 42002**

From: Steve Hampson, UK-KWRRI

Thru: Lindell Ormsbee, UK-KWRRI

Re: Risk Based End State Vision and Variance Report for the Paducah Gaseous Plant, Paducah, Kentucky (DOE/OR/07-2119&D0/R2)

Date: March 23, 2004

Attached are UK-KRCEE comments on the Risk Based End State (RBES) Vision and Variance Report for the Paducah Gaseous Plant, Paducah, Kentucky (DOE/OR/07-2119&D0/R2). Our initial review of the Executive Summary and variance tables prompted the expenditure of time to review the entire document.

UK concurs with the use of a risk-based end state (RBES) as a mechanism to further assess the PGDP Environmental Management (EM) program. UK agrees with many of the assumptions made for RBES Hazard Area alternatives. Specific comments for the document text and variance tables are attached.

Please contact Steve Hampson at (502) 564-8390 extension 4507/skhamp1@pop.uky.edu with questions or comments.

c: Dr. John A. Volpe
Mr. Jim Kipp

1. **Section 1, Page 1, Second Paragraph.** UK concurs with the use of a risk-based end state (RBES) as a mechanism to further assess the PGDP EM program. Use of this approach allows a clear path forward for evaluation of accelerated risk based strategies to minimize impacts on public health.
2. **Section 1, Page 2, Second Paragraph.** Are the agreement mechanisms in place that will allow the DOE to renegotiate current compliance approaches and agreements at the PGDP? Given the difficulties and time involved reaching agreements on the recent LOI and current ACO, is attaining RBES modification to current agreements and the current end state a realistic possibility?
3. **Section 2.3, Page 15, First Paragraph.** The statement relative to identification of recent faulting is not correct based on the present state of knowledge and information disseminated to all involved parties. See memorandum of February 26, 2004 from Hampson to Murphie regarding the status of seismic investigations and seismic assessments at the PGDP and its environs.
4. **Section 4.1.1, Page 44, Second and Last Paragraphs.** While ⁹⁹T does not currently exceed the drinking water MCL in areas outside of the DOE property boundary, the groundwater resource has been contaminated with ⁹⁹Tc both in and outside of the DOE property boundary. Additionally, ⁹⁹Tc has been modeled to exceed the MCL at and outside of the property boundary within 1000 years if barriers to migration are not in place. Based on previous assessments presented in this document residents have the potential to be exposed to groundwater above ⁹⁹Tc MCLs at off-property locations both under current conditions and under any future conditions that do not minimize the migration of ⁹⁹Tc from source areas to points of exposure.
5. **Section 4.1.1, Page 47, "Pathways", Third Paragraph.** Based on the ITRD evaluation for the PGDP and subsequent implementation of preferred treatment trains, a reduction in source terms is possible at the PGDP. Treatment of groundwater source terms will accelerate risk reduction and result in a reduction of DOE's long-term mortgage at the PGDP only if conducted in conjunction with the treatment trains identified by the ITRD group.
6. **Section 4.1.1, Page 47, "Pathways", Third Paragraph.** Based on modeling it has been demonstrated that capping alone will not minimize the potential for releases from burial grounds. Modeling has indicated that caps must be tied to hydrological barriers in order to minimize infiltration and exfiltration from the burial grounds.
7. **Section 4.2.1, Page 50, "Pathways", Third Paragraph and Section 4.2.2, Page 57, Third Paragraph.** This discussion is not entirely correct. Under current conditions exposures are attributable to bank soils, sediments, scrap metal, and surface water. Without removal of or barriers to contact with bank soils, continued releases having the potential to impact public health will occur.

8. **Section 4.3.1, Page 58, "Pathways", First Paragraph.** How is buried waste a direct contact risk?
9. **Section 4.3.1, Page 58, "Pathways", First Paragraph.** There have been no technically sound and conclusive investigations demonstrating that contaminants are not migrating from these units to groundwater and surface water.
10. **Section 4.3.1, Page 59, "Pathways", Second Paragraph.** The waste is buried and the units are capped and these conditions must be reflected in exposure assumptions for the units. Physical controls of soil cover and caps would clarify the exposure and pathway discussions relative to these units.
11. **Section 4.3.1, Page 60, "Pathways", Table 4.5.** Explain how ^{228}Th is considered without considering the other nuclides in the ^{232}Th decay chain.
12. **Section 4.6.1, Page 70, "Pathways", Second Paragraph.** There have been no technically sound and conclusive investigations demonstrating that contaminants are not migrating from these units to groundwater and surface water.
13. **Section 4.6.1, Page 71, "Pathways", Table 4.7.** See comment 11.
14. **Section 4.6.2, Page 74, "Pathways", Last Paragraph.** Based on modeling it has been demonstrated that capping alone will not minimize the potential for releases from burial grounds. Modeling has indicated that caps must be tied to hydrological barriers in order to minimize infiltration and exfiltration from the burial grounds.
15. **Section 4.7, Page 74, "Pathways", First Paragraph.** What DMSAs and legacy wastes have been or are contaminating soils, surface water, etc.?
16. **Section 4.8.1, Page 77, "Sources".** In the cylinder yards the primary sources of exposure are clearly the cylinders containing DUF6. Direct exposure to the gamma radiation from the cylinders and not the soils is the primary pathway of concern for the cylinder yards. There have been only a few breaches and possible release of DUF6 from the 30,000+ cylinders in the yards. Therefore, contamination of soil zones from Hazard Area 8 should be minor and restricted to a few hot spots.
17. **Section 5.1.1.3, Page 131, "Projected Risk Levels", First Paragraph.** Based on ITRD recommendations, a fence line action was necessary to reduce current TCE concentrations to levels that would allow property-boundary concentrations to approach MCLs. The current planned heating technologies for source zones were never meant to stand alone and were always linked to dissolved phase actions for both ^{99}Tc and TCE within the restricted area, at the fence line, and on DOE property outside of the restricted area.

18. **Section 5.1.2.2, Page 132, “Pathways”, 2nd Paragraph.** Recent investigations to collect and evaluate data on the distribution of contaminants in the NSDD have demonstrated that bank soils are the primary source of contaminant releases in the ditches. A barrier to continued releases of contaminants from bank soils would and should be real-time identification and removal of hot spots.
19. **Section 5.1.4.2, Page 134, “Pathways”, First Paragraph.** Data exists that establishes past and continuing migration of surface soil and contaminants.
20. **Section 5.1.9.3, Page 134, “Projected Risk Levels”, First Paragraph.** Based on reasonable assumptions for future land use, the target risk level for cleanup of soils within the restricted area should be based on industrial and not residential exposures.
21. **Section 5.2, Page 140, Bullets.** Concur with projected radiological and non-radiological cleanup levels for future industrial and recreational use designations at the PGDP. However if the facilities within the restricted area are to be free released and not under the control of the Department of Energy, more restrictive state and/or federal cleanup levels should be applicable.
22. **Page 142, Table 5.1, HA 1, V-1.1.** Enhanced institutional controls provide an excellent approach for control of long-term groundwater usage. However, this should not preclude evaluation and implementation of technologies to reduce source terms and dissolved phase contamination at the PGDP.
23. **Page 143, Table 5.1, HA 1, V-1.2.** If only source reduction were implemented at the PGDP with no concurrent dissolved phase actions it is likely that no significant reduction in groundwater contamination would be achieved. ITRD recommendations consisted of treatment trains to concurrently address sources and dissolved phase contamination.
24. **Page 143, Table 5.1, HA 1, V-1.2.** Based on the current lack of pilot programs at PGDP to demonstrate an inability to achieve reductions in source terms and groundwater contamination it will be difficult for DOE to defend a position pursuing technical impracticability (TI) waivers.
25. **Page 143, Table 5.1, HA 1, V-1.2.** Based on the point of compliance established by the RCRA/CERCLA remediation at the Maxey Flats Nuclear Disposal Site, the PGDP point of compliance should be the DOE property boundary.
26. **Page 144, Table 5.1, HA 1, V-1.3.** Previous site investigations of burial grounds at the PGDP have not provided data that conclusively demonstrates whether the burial grounds are contributing to groundwater contamination. DOE should demonstrate that under the worst case scenario contamination from the burial grounds would not exceed MCLs at the fenceline or the DOE property boundary. Even if there is an impact to groundwater at the fenceline, the pathway for exposure is incomplete because of long-term access controls.

27. **Page 144, Table 5.1, HA 1, V-1.4.** DOE's modeling has shown that capping without hydrological barriers will not prevent infiltration and exfiltration from the burial grounds.
28. **Page 144, Table 5.1, HA 1, V-1.4.** See comment # 23. The ITRD identified a number of technologies that have the potential to significantly reduce contaminant concentrations in the dissolved phase plume.
29. **Page 147, Table 5.1, HA 1, V-1.5.** DOE's modeling indicates that levels of ⁹⁹Tc in groundwater that are greater than MCLs may discharge to surface water outside of the DOE property boundary. Under the RBES, how does the DOE plan to address the discharge of ⁹⁹Tc to Little Bayou Creek in the future?
30. **Page 148, Table 5.1, HA 2, V-2.1.** The target risk levels within the restricted area should be based on reasonable future land use which has been established as industrial.
31. **Page 148, Table 5.1, HA 2, V-2.1.** Under KRS 13A "policy" cannot be used establish a standard in the Commonwealth. A standard must be promulgated in an administrative regulation.
32. **Page 148, Table 5.1, HA 2, V-2.1.** Because of the implementation enhanced institutional controls under the RBES, the target risk in industrial areas should be set at 1E-4.
33. **Page 149, Table 5.1, HA 2, V-2.2.** Removal of hot spots negates the necessity for sediment basin in drainage channels. If it is determined that controls are necessary to minimize sediment releases, alternative technologies such as those proposed by Dr. Richard Warner/UK should be evaluated because of the significant cost savings.
34. **Page 149, Table 5.1, HA 3, V-3.1.** DOE has not demonstrated that these units do not contribute to groundwater contamination. DOE's modeling has shown that capping without hydrological barriers will not prevent infiltration and exfiltration from the burial grounds. See comment # 26.
35. **Page 149, Table 5.1, HA 3, V-3.1.** DOE should clarify that the potentially exposed individual would be an industrial worker excavating into the waste. However, this pathway seems unlikely given DOE's implementation of enhanced institutional controls.
36. **Page 149, Table 5.1, HA 4, V-4.1.** We concur with DOE's position to remove hot spots within the restricted area using a target risk of 1E-4. It is not reasonable to apply a residential target risk of 1E-6 to remediation activities conducted within the restricted area.
37. **Page 149, Table 5.1, HA 5, V-5.1.** Climatological conditions are addressed in engineering design and do not preclude the construction of a potential CERCLA Cell.
38. **Page 149, Table 5.1, HA 5, V-5.1.** IS NREPC uniformly applying seismic regulatory requirements to all permitted facilities?

39. **Page 149, Table 5.1, HA 5, V-5.1.** Technical experts do not agree that seismic conditions at the PGDP preclude the construction of a potential CERCLA Cell. See memorandum of February 26, 2004 from Hampson to Murphie regarding the status of seismic investigations and seismic assessments at the PGDP and its environs.
40. **Page 149, Table 5.1, HA 5, V-5.1.** In addition to engineering controls to address climatological and seismic issues, control of waste forms can minimize the potential for release from the CERCLA Cell.
41. **Page 154, Table 5.1, HA 7, V-7.1.** Future land use for the restricted area has been agreed to as industrial. Therefore it is unreasonable to set a residential target risk of 1E-6. Enhanced institutional controls would preclude the construction of residential housing units in this restricted area.
42. **Page 155, Table 5.1, HA 8, V-8.1.** Based on the number of cylinders breached, excavation of hot spots would be cost-effective and accelerate cleanup subsequent to removal of the DUF6 cylinders. Risk assessments have demonstrated that even under a no action scenario, the cylinder yards pose minimal risk.

> -----Original Message-----
> From: Steve Doolittle [<mailto:sdoo@co.mccracken.ky.us>]
> Sent: Tuesday, March 30, 2004 3:30 PM
> To: 'Dollins, David W'
> Subject: DOE's Risk Based End State Vision
>
>
> March 30, 2004
>
> Mr. David Dollins
> Paducah Operations Oversight Group
> US Department of Energy
> PO Box 1410
> Paducah, KY 42002
>
>
> RE: Comment on DOE's End State Vision for the PGDP
>
> Dear David:
>
> On behalf of McCracken County we wish to add these comments to the
> land use portion of the End State Visioning process.
>
> We support DOE's general determination that current land uses should
> be maintained. That is, industrial lands should remain industrial and
> recreational land uses should be maintained. However, we would offer
> that flexibility should be put in place so that some of the open
> recreational or open space lands could be offered for some
> industrialization/reindustrialization opportunities. Local planning
> agencies should at least be allowed an opportunity at some future point
> to decide if a re-use of recreational or open area is appropriate.
>
> We recognize DOE's hard work in this area and appreciate the
> opportunity to be heard.
>
> Steven Doolittle, McCracken County Administrator
>

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PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

111 Memorial Drive • Paducah, Kentucky 42001 • (270) 554-3004 • PaducahCAB@bellsouth.net • www.oakridge.doe.gov/pgdpssab

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David Dollins

*Additional information
about contacting board
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web site or by contacting
the board at
(270) 554-3004.*

NEWS MEDIA CONTACT:

Lynn Link, Bechtel Jacobs Company LLC
(270) 441-5209

FOR IMMEDIATE RELEASE

March 31, 2004

Paducah Gaseous Diffusion Plant CITIZENS ADVISORY BOARD

Forwards End State Vision Recommendation to DOE

Paducah, KY—The PGDP CAB approved by consensus recommendation to the U.S. Department of Energy (DOE) regarding the end state of the Paducah site at their Board meeting held March 18, 2004. The CAB's primary mission is to provide informed recommendations and advice on major policy issues regarding environmental restoration, waste management and related PGDP activities.

The recommendation, which was submitted to DOE on March 30, lists 12 items the CAB feels are necessary to address the concerns of the community. The goal of this recommendation is to protect human health and the environment while preparing for a viable economic future for the Paducah site. While the recommendation calls for reindustrialization, it encourages in-depth remediation and the health and safety of plant neighbors as well as plant workers.

As the community's voice to DOE regarding cleanup of the PGDP, the CAB's objective was obtain input from all parties affected. Over the last eight months this recommendation has been discussed with city, county and state governments, plant neighbors, local chambers of commerce, economic development groups and the worker's union. To date, the CAB has received letters of support from Active Citizens for Truth and the Paducah-Area Community Reuse Organization. The Board hopes other groups will join them in ensuring that the end state of the Paducah site will benefit the entire community.

The CAB meets on the third Thursday of each month at 5:30 p.m. The meetings, which are open to the public, are held at 111 Memorial Drive, Paducah. For more information, contact the CAB office at 270-554-3004.

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PADUCAH GASEOUS DIFFUSION PLANT CITIZENS ADVISORY BOARD

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(Kentucky)

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Environmental Protection
Agency

DOE Federal Coordinator

David Dollins

*Additional information
about contacting board
members directly can be
obtained from the CAB
web site or by contacting
the board at
(270) 554-3004.*

Consensus Recommendation: 04-07

Title: End State Vision for the Paducah Gaseous Diffusion Plant Site

Background:

In November 2002, the Paducah Gaseous Diffusion Plant (PGDP) Citizens Advisory Board (CAB) requested that the U.S. Department of Energy (DOE) provide a list of topics for the CAB to work from in developing recommendations. In DOE's response, the CAB was asked to focus on long term stewardship, specifically the CAB's End State Vision for the PGDP site.

In June 2003, the Long-Range Strategy/Stewardship task force began the process of obtaining input from the community for an End State Vision. The first meeting was attended by representatives of the CAB, DOE, the Kentucky Department of Waste Management, the West Kentucky Wildlife Management Area (WKWMA), the Greater Paducah Economic Development Council (GPEDC), the Paducah Area Community Reuse Organization (PACRO), Active Citizens for Truth (ACT), and the Coalition for Health Concerns. Also present were the McCracken Judge Executive, the Mayor of Paducah, the Paducah City Manager, and members of the public. In more recent meetings, the Board has also discussed this recommendation with the McCracken County Administrator.

Following development of the End State recommendation in draft form, presentations were made to various groups and organizations to obtain comments and suggestions on specific points contained within the recommendation. This information was presented to the PACRO Finance and Executive Committee, the Ballard County Chamber of Commerce, the Paducah Chamber of Commerce, ACT, and to the Paper, Allied-Industrial, Chemical, and Energy Workers Local 5-550. Comments received from these meetings that were applicable have been incorporated into this recommendation. Throughout the eight-month process, the CAB's objective has been to include and represent the community in this matter.

Current Status:

To develop an End State Vision, certain facts concerning the current situation of the PGDP site must be considered. The United States Enrichment Corporation (USEC) leases the uranium enrichment facilities from DOE. While USEC has announced plans to build and operate a centrifuge facility in Ohio, replacing the older Paducah operation, there remains a possibility that use of the Paducah site could continue beyond 2010. Additionally, DOE has yet to announce if the Paducah site will transition immediately into Decontamination and Decommissioning (D&D) upon USEC's departure from the site, or if the site will be placed on standby while determining national energy needs.

Another event, redefining Paducah's future, is the construction of a Depleted Uranium Hexafluoride (DUF₆) Conversion Facility. Operation is scheduled to continue until 2030 or beyond and is viewed by the CAB as the first step in reindustrialization of the Paducah site. The progress by DOE in areas such as the North-South Diversion Ditch, the DUF₆ Conversion Facility, Six-Phase Heating Technology, Scrap Metal Removal, and the characterization and disposition of the DOE Material Storage Areas is considered a major step forward in developing a safe, reusable site.

The uncertainty of the future of the gaseous diffusion process coupled with reindustrialization (DUF₆), which has already begun, do in fact help define the End State Vision of this CAB. It is, however, the belief of this CAB that decisions made today regarding the end state of the PGDP will provide guidance for future generations as they implement and update this End State Vision.

Concern:

As the CAB worked toward its End State Vision, three items emerged as primary concerns:

- Environmental remediation as currently planned may not be sufficient to fully protect human health and the environment in the future without the possibility of reoccurring issues.
- Environmental remediation as currently planned may not be sufficient to allow the Paducah community every opportunity in reindustrializing the site, and thereby protecting and building upon the economic impact this site has on the region.
- If this community waited until USEC ceased operations and environmental remediation was completed before acting on its end state vision, many years that could have been productively used for reindustrialization planning and development would be lost.

Goal:

The three concerns stated above share a common and single solution; the level of environmental remediation must be sufficient to allow this community control of its future. Therefore, the goal of the Paducah CAB's End State Vision is as follows:

To protect human health and the environment while preparing for a viable economic future for the Paducah site.

Recommendation:

To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:

- 1. DOE is encouraged to structure environmental remediation activities to allow continued nuclear and non-nuclear industrial use of the existing industrialized area and to continue recreation/wildlife use of those areas presently leased to the WKWMA.**
- 2. DOE begin investigating means to modify security access to non-USEC leased areas, allowing the reindustrialization process to move forward.**
- 3. DOE begin consultation with PACRO, GPEDC, and other involved parties to inventory and investigate buildings and facilities to determine potential reindustrialization value.**
- 4. DOE decontaminate the buildings, facilities, and surrounding grounds (scheduled for reuse) to the level necessary to allow this community every opportunity to obtain non-nuclear tenants for the site.**
- 5. DOE begin physical rehabilitation of infrastructure facilities identified as having potential for the reindustrialization process.**
- 6. DOE thoroughly characterize any contamination remaining at the site and adjoining property, after all environmental remediation activities are complete. This will allow the issuance of state**

and federal “covenant not to sue”, or an equivalent document, for future tenants and property owners.

7. DOE should investigate all possible alternatives to the proposed Comprehensive Environmental Recovery, Compensation, and Liability Act (CERCLA) waste disposal facility. There are four gaseous diffusion process buildings that have little, if any, potential for reindustrialization. The footprints of these buildings could be used for an above-ground concrete encapsulation of final D&D waste. This option is more acceptable to the community and may lower long-term costs for both Environmental Management (EM) and Legacy Management (LM).
8. DOE plan and initiate removal of all burial grounds within the industrial area. The potential for contaminant migration in the air, soil, groundwater and surface water is greatly increased if the burial grounds remain. The unexcavated burial grounds will negatively impact future industrial options for the site.
9. DOE, within two years, resolve the issue of institutional controls, compensation, or “buy out” with the property owners affected by off-site groundwater contamination.
10. DOE begin a public information/involvement process as soon as possible to educate the community on the transition from the Office of EM to the Office of LM, specifically addressing issues such as, but not limited to, long-term taxpayer costs (is the best financial decision for EM also the best financial decision for taxpayers throughout LM activities) LM monitoring of the site, and, if necessary, responding to new or migrating contaminants.
11. DOE remove sources and potential sources of off-site groundwater contamination.
12. DOE is encouraged to begin immediately working with the local communities to explore possibilities which address the three concerns listed above. The CAB offers the following as a means to begin achieving the common goal of this community:
 - Provide on-site facilities for environmental remediation/innovative technology companies.
 - Provide on-site facilities for the research being performed by the University of Kentucky for neptunium removal from nickel and use of converted depleted uranium. Upon success of this research, provide the necessary production facilities.
 - Explore the potential for the on-site development of Hazardous Material and Emergency Response Training facilities.
 - Explore the possibility of establishing an energy research technology park at the site.

Approved by Consensus March 18, 2004

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Attachment 16

SUMMARIES OF PUBLIC AND STAKEHOLDER COMMENTS

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COMMENTS ON
Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
(DOE/OR/07-2119&D0/R2)
(This summary includes all comments received from the public, public organizations, and the regulatory agencies before March 11, 2005)

Category	Commentor:	Comment
General	<p>MAJOR COMMENTS</p> <ol style="list-style-type: none"> 1. The document does not cover all risks and contains some inconsistencies. 2. The process being followed is pre-decisional, unfriendly to the public, and inconsistent with community relations plans. 3. A more comprehensive path forward for the RBES process needs to be provided by DOE. 4. DOE should use the data and comments on the RBES report to develop a reindustrialization plan that includes input from all stakeholders. 5. DOE needs to provide information about the transition that will occur between the Office of EM and Office of LM. 6. DOE should provide resources that can be used to explore future reuse of the PGDP. <p>Charles and Vicki Jurka (Written Comment)</p>	<p>Page 1: “Once finalized, this report will provide information that can be used to establish <u>clearly articulated</u> and <u>technically achievable</u> cleanup goals for PGDP...” It is our hope that the final document will achieve these goals; as the draft document fails miserably.</p> <p>Generally:</p> <ul style="list-style-type: none"> • This draft document fails to address radiological risk. • Anticipated recreational use for areas outside the fence is inconsistent with McCracken County zoning ordinance. • This draft document makes contradictory statements (e.g. Pg ES-3, 1st set #3, 2nd set #7, off-site/on-site disposal). • During D&D the NE plume treatment system may be dismantled/removed (pg. 5). • 24% of the population living around PGDP still rely on groundwater (pg. 27). • The timeline for this document, including but not limited to production, notification, availability, and review, was insufficient. This hurried approach generated a poorly prepared document containing many errors (including noticeable omissions). • The intended use of this document is poorly understood by the public and others: DOE calls it a “living document” with a fast approaching “final” version due date.
	<p>Mark Donham and Kristi Hanson (Written Comment)</p>	<p>We have some real problems with the Risk Based End states program and site specific plans for Paducah. The RBES process has been flawed from the beginning. It is based on the secretive “Top to Bottom Review” and the agreements with the various states were done mostly behind closed doors. We even worked through the CAB and had 4 different consensus occasions when we were involved that asked to be involved in all of this process – but this was just ignored. Now that they you developed these specific plans, it is put out for a quick comment period with an unrealistic turnaround period. This is bogus public participation and shows a continued contempt for the public’s concerns here and across the DOE complex. As far as the specific variances go, our comments follow each of the variances contained in the ***** below. We use your contractor’s own words as the basis for what we comment on.</p>

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Category	Commentor:	Comment
	Mark Donham and Kristi Hanson (Written Comment)	In summary, we see this RBES process as a publicly unfriendly [in violation of the site community relations play (sic)] ploy to allow DOE to walk away from its billion dollar commitments it has made in the past decade and half to adequately clean up the site. The public has for all intents and purposes been cut out of the process. There has been no environmental studies of this proposal, and we oppose it. If the DOE wants to amend its cleanup plans, it should start at the beginning and engage the public adequately, do proper environmental studies, and give a rational justification for its decisions. The RBES process has been just the opposite.
	PGDP CAB (Written Comment)	The PGDP CAB has prepared comments, based on discussion held at the February Board meeting for the <i>Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky</i> (DOE/OR/07-2119&D0/R2).
		The Board advises that the following comments be considered: <ul style="list-style-type: none"> ▪ The CAB has been informed that the Department’s Risk-Based End State Strategy Document is not a decision document. Since this document includes cleanup alternatives for the Paducah Gaseous Diffusion Plant, the Board is concerned that it will become a decision document without public input. ▪ The Board also feels that the timeline for this document is too aggressive and does not allow adequate time for review due to the complexity of its content.
	Bill Tanner (and others) (Oral Comment March 11 Workshop)	Stated that DOE needs to provide a more comprehensive path forward for what will occur after the final RBES is delivered on March 30, 2004.
	Vicky Jurka (Oral Comment March 11 Workshop)	Reiterated her belief that the RBES process is being used to avoid real clean-up. Also, noted that if groundwater sources are not cleaned up, then the McNairy Formation will be impacted. (Concerns about the McNairy Formation and contamination were also voiced by John Turner.)
	KDFWR (Oral Comment March 11 Workshop)	Stated (with agreement with others) that DOE’s presentation of the RBES process and the document contents needs to be simpler. DOE used too much jargon in the presentation.

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Category	Commentor:	Comment
	PACRO (Written Comment)	<ol style="list-style-type: none"> 2. ISSUE A path forward using the data/comments on the Draft End State Vision Document by DOE. 3. RECOMMENDATION A. Select an internationally respected industry site selection firm and the completion of an Industrial Parks Master Plan for the 3,000+ acres of property currently owned by DOE in west McCracken County to perform all tasks of the Scope of Services listed below: (Please see PACRO comments dated March 11, 2004, for additional information.) 4. ADVANTAGE A. This approach pioneers the most equitable way to arrive at a variable end state vision for the site. It allows the State Fish and Game, Citizens Advisory Board, as well as other organizations in the community, like PACRO and GPEDC, with a mission to mitigate the downsizing of USEC, to speak with as close to a single voice as possible for an end state vision. B. To avoid any perceived favoritism, each participating entity should be offered an opportunity to fund a portion of the study. C. The results of this approach will be based on the industry experience of the firm, as well as, the positions of other community stakeholders.

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Category	Commentor:	Comment
	<p>CAB (Written Comment)</p>	<p>Current Status:</p> <p>To develop an End State Vision, certain facts concerning the current situation of the PGDP site must be considered. The United States Enrichment Corporation (USEC) leases the uranium enrichment facilities from DOE. While USEC has announced plans to build and operate a centrifuge facility in Ohio, replacing the older Paducah operation, there remains a possibility that use of the Paducah site could continue beyond 2010. Additionally, DOE has yet to announce if the Paducah site will transition immediately into Decontamination and Decommissioning (D&D) upon USEC's departure from the site, or if the site will be placed on standby while determining national energy needs.</p> <p>Another event, redefining Paducah's future, is the construction of a Depleted Uranium Hexafluoride (DUF₆) Conversion Facility. Operation is scheduled to continue until 2030 or beyond and is viewed by the CAB as the first step in reindustrialization of the Paducah site. The progress by DOE in areas such as the North-South Diversion Ditch, the DUF₆ Conversion Facility, Six-Phase Heating Technology, Scrap Metal Removal, and the characterization and disposition of the DOE Material Storage Areas is considered a major step forward in developing a safe, reusable site.</p> <p>The uncertainty of the future of the gaseous diffusion process coupled with reindustrialization (DUF₆), which has already begun, do in fact help define the End State Vision of this CAB. It is, however, the belief of this CAB that decisions made today regarding the end state of the PGDP will provide guidance for future generations as they implement and update this End State Vision.</p> <p>Concern:</p> <p>As the CAB worked toward its End State Vision, three items emerged as primary concerns:</p> <ul style="list-style-type: none"> • Environmental remediation as currently planned may not be sufficient to fully protect human health and the environment in the future without the possibility of reoccurring issues. • Environmental remediation as currently planned may not be sufficient to allow the Paducah community every opportunity in reindustrializing the site, and thereby protecting and building upon the economic impact this site has on the region. • If this community waited until USEC ceased operations and environmental remediation was completed before acting on its end state vision, many years that could have been productively used for reindustrialization planning and development would be lost. <p>Goal:</p> <p>The three concerns stated above share a common and single solution; the level of environmental remediation must be sufficient to allow this community control of its future. Therefore, the goal of the Paducah CAB's End State Vision is as follows:</p> <p>To protect human health and the environment while preparing for a viable economic future for the Paducah site.</p>

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Category	Commentor:	Comment
	CAB (Written Comments)	<p>To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:</p> <p>10. DOE begin a public information/involvement process as soon as possible to educate the community on the transition from the Office of EM to the Office of LM, specifically addressing issues such as, but not limited to, long-term taxpayer costs (is the best financial decision for EM also the best financial decision for taxpayers throughout LM activities) LM monitoring of the site, and, if necessary, responding to new or migrating contaminants.</p>
	CAB (Written Comments)	<p>To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:</p> <p>12. DOE is encouraged to begin immediately working with the local communities to explore possibilities which address the three concerns listed above. The CAB offers the following as a means to begin achieving the common goal of this community:</p> <ul style="list-style-type: none"> • Provide on-site facilities for environmental remediation/innovative technology companies. • Provide on-site facilities for the research being performed by the University of Kentucky for neptunium removal from nickel and use of converted depleted uranium. Upon success of this research, provide the necessary production facilities. • Explore the potential for the on-site development of Hazardous Material and Emergency Response Training facilities. • Explore the possibility of establishing an energy research technology park at the site.
Document Preparation	UK-KRCEE (Written Comment)	<p>Section 1, Page 2, Second Paragraph. Are the agreement mechanisms in place that will allow the DOE to renegotiate current compliance approaches and agreements at the PGDP? Given the difficulties and time involved reaching agreements on the recent LOI and current ACO, is attaining RBES modification to current agreements and the current end state a realistic possibility?</p>
	MAJOR COMMENTS	<ol style="list-style-type: none"> 1. Time allowed for comments is too aggressive. 2. The document is complex, and its intended use is unclear. 3. PACRO and UK support the end-state process but believe that the entire community needs to be involved in the process. 4. The guidance used to complete the document is not consistent with that discussed with the public earlier. 5. A public participation appendix should be included in the report.
	PGDP CAB (Written Comment)	<p>The Citizen's Advisory Board has been informed that the Department's Risk-Based End State Strategy Document is not a decision document. Since this document includes cleanup alternatives for the Paducah Gaseous Diffusion Plant, the Board is concerned that it will become a decision document without public input. The Board also feels that the timeline for this document is too aggressive and does not allow adequate time for review due to the complexity of its content.</p>
	PACRO (Written Comment)	<p>1. PACRO supports the development process being used for the Risk Based End State.</p>

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Category	Commentor:	Comment
	PACRO/SUN (Written Comment)	"The concern we have is that we work through this as a community," Anderson said. "I don't think it needs to be just the advisory board and PACRO. The whole community and DOE have roles to play."
	KDFWR (Written Comment)	Due to the available format and time restraints for the comment period, KDFWR respectfully offers the following initial comments for consideration. Further comments may be deemed necessary after additional review of the entire document, and subsequent documents pertaining to this topic.
	Charles and Vicki Jurka (Written Comment)	<ul style="list-style-type: none"> • The timeline for this document, including but not limited to production, notification, availability, and review, was insufficient. This hurried approach generated a poorly prepared document containing many errors (including noticeable omissions). • The intended use of this document is poorly understood by the public and others: DOE calls it a "living document" with a fast approaching "final" version due date.
	Bill Tanner (Oral Comment Feb. 26 Workshop)	The guidance used to prepare the current draft of the document differs from that discussed with the CAB in September 2003. This change in guidance should have been more widely discussed.
	Bill Tanner (Oral Comment Feb. 26 Workshop)	Questioned if the public participation appendix being prepared for the revised RBES will be available at the March 18, 2004 CAB meeting.
	UK-KRCEE (Written Comment)	Section 1, Page 1, Second Paragraph. UK concurs with the use of a risk-based end state (RBES) as a mechanism to further assess the PGDP EM program. Use of this approach allows a clear path forward for evaluation of accelerated risk based strategies to minimize impacts on public health.
GWOU Remediation	MAJOR COMMENTS <ol style="list-style-type: none"> 1. Reindustrialization of the plant is not possible without remediation of the plume. 2. Bioremediation needs to be considered for plume remediation. 3. The Water Policy (in its current form or in some other form) needs to be made permanent. 4. There needs to be an attempt to clean up the groundwater and its sources of contamination before using natural attenuation only. 5. Without cleanup, including source actions, the plume will continue to spread and eventually extend beyond the water policy box. 6. Burial ground sources should not simply be capped. 7. More comprehensive human health and ecological risk assessments are needed when comparing the CPES and RBES. 8. Additional information about plume migrations should be added to the report. This should include a discussion of the impacts of plant shut-down on plume migration. 9. More attention needs to be paid to the ⁹⁹Tc plume because some modeling results indicate that ⁹⁹Tc concentrations in groundwater could exceed the MCL in areas off DOE property in the future. 10. A comprehensive groundwater remedy should consider a fence-line action. 	

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Category	Commentor:	Comment
	Ralph Young (Written Comment)	Here's my question for the DOE concerning the discussion of the "Risk-based End State Vision" document, "Has DOE considered the use of microbes for in-situ bio-remediation of chlorinated compounds?" Over the last 15 years, researches have made a lot of progress in this area and there are many demonstration projects in progress across the US. Here's a link to one of the leading researchers in the field, Dr. Jim Gossett: http://www.cee.cornell.edu/faculty/info.cfm?abbrev=faculty&shorttitle=research&netid=JMG18
	CAB/SUN (Written Comment)	I think this technology might be feasible to apply in those areas where the pump and treat technology has been less effective. Among other things, the DOE plan assumes that massive groundwater contamination beneath the plant would be left for nature to clean up, rather than spend as much as \$140 million trying to eliminate the sources of the pollution.
	CAB/SUN (Written Comment)	"We don't believe that will get us to the point that the plant is safe for humans and the environment," said Bill Tanner, chairman of the plant citizen's advisory board, "We're also concerned that it wouldn't permit reindustrialization, so it would have a severe economic impact." ...the board recommends that:
	CAB/SUN (Written Comment)	DOE establish long-term agreements to provide free municipal water to 121 customers – mostly homes and some businesses – in return for not using wells that are or could become contaminated. Agreements are now for five years, said Tanner, superintendent of West McCracken Water District. "They need to remove that doubt and make it permanent."
	CAB/SUN (Written Comment)	Tanner said there is no technology to clean up the groundwater, but the board wants to be sure that "we've done all we can do" scientifically before the water is left to nature.
	Mark Donham/SUN (Written Comment)	Donham said he is worried about many "variances" in the new end-use plan compared with an older one, such as not cleaning up sources of groundwater pollution and not digging up uranium burial grounds. He said \$1 billion has been spent so far with little to show for cleanup.
	KDFWR (Written Comment)	V-1.1, 6-1, 9.1 – The Current Planned End State (CPES) continues that PGDP water policy. The RBES assumes the use of enhanced institutional controls. KDFWR feels both of these actions are potentially inadequate in monitoring and remediating potential ecological risk to offsite receptors. KDFWR feels that a more aggressive groundwater monitoring and cleanup regiment should be initiated under D&D of the plant. It is unclear as to the mechanism for enhanced institutional controls for non-DOE and DOE owned property. Will this involve deed restrictions or similar legal arrangement for non-DOE owned property?

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Category	Commentor:	Comment
	KDFWR (Written Comment)	V-1.2, 9.3 – The CPES uses a DNAPL source reduction by using heating technologies. The RBES does not include any active reduction of contaminants. Since there would be limited control of groundwater movement to off-site area, KDFWR feels that monitoring the natural attenuation of groundwater would inadequately address the issue of groundwater contamination. KDFWR advocates the proactive stance of attempting to decontaminate the groundwater along with continued monitoring. Risks under the RBES would include the mentioned risk to samplers, but also include ecological risk and potential risk to recreational users due to the potential for groundwater to return to the surface, thus making a completed pathway to workers and recreational users, as well as ecological receptors.
	KDFWR (Written Comment)	V-1.4 – The CPES assumes implementation of oxidation technologies to remove trichloroethene (TCE) and other solvents from the phase plume. The RBES does not actively remove contaminants and only monitors natural attenuation. With limited control of groundwater movement to off-site areas, KDFWR feels that monitoring natural attenuation of groundwater contaminants from the dissolved phase plume is inadequate to address the potential impact these contaminants may have on ecological receptors. With no control of current or future rates of contamination into the groundwater, a non-removal plan poses a potential risk to both human and ecological receptors. KDFWR feels that adequate risk assessments, including ecological risk assessments, should be completed for each scenario to determine the best plan of action for the burial grounds site. It appears from the provided map that the TCE plume extends well beyond the property boundaries onto both private and state owned property.
	KDFWR (Written Comment)	V-1.5 – The CPES recommends active removal to reduce solvent contamination in groundwater discharge into Little Bayou Creek. RBES does not allow for active cleanup and would only monitor concentrations at the discharge point. KDFWR feels that this action would not be appropriate as contaminated water from the Little Bayou Creek leaves the area and may pose risk to ecological receptors within Little Bayou, Big Bayou, and eventually the Ohio River. Active remediation may be necessary to reduce these potential risk to the levels required by the state.

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	Charles and Vicki Jurka (Written Comment)	<p>The landowners, through the PGDP Water Policy, have entered into an agreement to abandon the use of groundwater while purchasing municipal water at DOE's expense. This agreement has a five-year life with variable renewal options. Since its inception, with one exception (landowner refusal), this removal action has performed effectively; meeting the goal of reducing "risks to residents, from exposure to" contaminated "groundwater."</p> <p>Under the risk-based end state proposal "enhanced institutional controls, would supersede (annul or replace) the current PGDP Water Policy." One of the proposed institutional controls takes the form of a legal agreement: placing "enforceable restrictions on groundwater." This type of legal agreement would be limited in duration through the law of perpetuity as well as subject to legal interpretation. Another proposal calls for the acquisition "of rights from the surrounding property owners and directly implements (ing) restrictions on groundwater and property use." This proposal enjoins the property owner to abstain from using their groundwater and/or property in exchange for an undetermined sum of money. Under the principles of mutual benefit both parties would automatically benefit from this buyer/seller agreement. But through this approach, the landowner realizes a lesser, more undesirable benefit when relinquishing not only property right but municipal water payments as well.</p> <p>DOE and its contractors contaminated the landowners groundwater; destroying a self-sufficient economic option for landowner water-production. DOE then ameliorated this harm through the Water Policy, by paying the costs associated with a new source of "clean" water. The extensive and expansive degree of groundwater contamination, under the current proposed remedial actions, will remain for many generations to come. In all likelihood, legal instruments will not bridge this generational span. The inherent failures of both current and risk-based proposals necessitates the exploration of other options. The most fail-safe, long-range, cost-effective option is the purchase and subsequent DOE control of "real estate" from all Water Policy landowners.</p>
	Charles and Vicki Jurka (Written Comment)	<p>Pages 143-147: Hazard 1, V-1.2 through V-1.5: This draft document makes claims that the only "variance in risk between the current planned end state and the RBES is the amount of time necessary to achieve MCLs." We disagree. The decision making process (scope, cost, schedule, etc.) fails to consider the progression of the currently identified groundwater plumes and the potential impact on landowners, residing out side the Water Policy boundaries, who still rely on groundwater sources. It also fails to address the importance of the element of time respecting the migration of unremediated contaminants beyond the current Water Policy boundaries and/or into the deeper aquifer (McNairy). It should be apparent that the proposed institutional controls will not ameliorate the risk for future generations.</p> <p>Barriers:</p> <ul style="list-style-type: none"> • (143) We endorse the regulators position for "source actions for reduce contaminant concentrations." • (143) We reject "technical impracticability waivers." • (144) We disagree with calling the fence line "point of exposure." It would be better identified as the source of all exposures. • (144-5) After 50 years of dumping by DOE and its contractors, source actions are necessary.

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Category	Commentor:	Comment
	Mark Donham and Kristi Hanson (Written Comment)	The DOE should not try to use the water policy as a political tool. Water should be supplied to those in the water policy separate from any other considerations. Adequate monitoring should occur to determine if the plume is spreading. With natural attenuation as the new cleanup plan, it is likely that the water policy will expand over time.
	Mark Donham and Kristi Hanson (Written Comment)	This addresses Variance 2 – 4, as they all relate to groundwater/source cleanup. This is a huge step back from the original commitments to cleanup the groundwater. We know that the plume both enters the river underground and that it bubbles up in springs close to the river and enters the creeks, and then into the river. We have little knowledge of how it actually enters the river underground, or how it might come up during flooded conditions. However, it has certainly been shown to be entering the river. If it is allowed to go on by natural attenuation, this will go on forever, practically. The one thing that the CAB agreed on was that removing the contamination sources should be the highest priority. We agreed with that also. The idea of walking away from this groundwater plume and not cleaning up the sources is of such a magnitude that it is hard to believe that the agency has properly thought this out. For example, won't this cause the plume to expand to an even wider area than it current occupies? How could it not? What about the areas where it bubbles to the surface? What are the long term impacts of this? Shouldn't there be an Environmental Impact Statement done on this proposal? We also want to know where US EPA stands on this, and whether or not this complies with CERCLA.
	Bill Tanner (Oral Comment Feb. 26 Workshop)	The uncertainty in the future water balance at the site due to enrichment plant shutdown needs to be discussed.
	Vicki Jurka (Oral Comment Feb. 26 Workshop)	It is possible that the concentration of TCE in groundwater will go up in the future when the enrichment plant shuts down. This needs to be discussed.
	Vicki Jurka (Oral Comment Feb. 26 Workshop)	The document needs to consider how future industrial releases from other (new) processes may affect DNAPL releases in the future. This interaction may limit future use of the site.
	Ruby English (Oral Comment March 11 Workshop)	Stated that the report needs more information about the contaminant plumes and their migration.
	UK-KRCEE (Written Comment)	Section 4.1.1, Page 44, Second and Last Paragraphs. While ⁹⁹ T does not currently exceed the drinking water MCL in areas outside of the DOE property boundary, the groundwater resource has been contaminated with ⁹⁹ Tc both in and outside of the DOE property boundary. Additionally, ⁹⁹ Tc has been modeled to exceed the MCL at and outside of the property boundary within 1000 years if barriers to migration are not in place. Based on previous assessments presented in this document residents have the potential to be exposed to groundwater above ⁹⁹ Tc MCLs at off-property locations both under current conditions and under any future conditions that do not minimize the migration of ⁹⁹ Tc from source areas to points of exposure.

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Category	Commentor:	Comment
	UK-KRCEE (Written Comment)	Section 4.1.1, Page 47, "Pathways." Third Paragraph. Based on the ITRD evaluation for the PGDP and subsequent implementation of preferred treatment trains, a reduction in source terms is possible at the PGDP. Treatment of groundwater source terms will accelerate risk reduction and result in a reduction of DOE's long-term mortgage at the PGDP only if conducted in conjunction with the treatment trains identified by the ITRD group.
	UK-KRCEE (Written Comment)	Section 5.1.1.3, Page 131, "Projected Risk Levels." First Paragraph. Based on ITRD recommendations, a fence line action was necessary to reduce current TCE concentrations to levels that would allow property-boundary concentrations to approach MCLs. The current planned heating technologies for source zones were never meant to stand alone and were always linked to dissolved phase actions for both 99Tc and TCE within the restricted area, at the fence line, and on DOE property outside of the restricted area.
	UK-KRCEE (Written Comment)	Page 142, Table 5.1, HA 1, V-1.1. Enhanced institutional controls provide an excellent approach for control of long-term groundwater usage. However, this should not preclude evaluation and implementation of technologies to reduce source terms and dissolved phase contamination at the PGDP.
	UK-KRCEE (Written Comment)	Page 143, Table 5.1, HA 1, V-1.2. If only source reduction were implemented at the PGDP with no concurrent dissolved phase actions it is likely that no significant reduction in groundwater contamination would be achieved. ITRD recommendations consisted of treatment trains to concurrently address sources and dissolved phase contamination.
	UK-KRCEE (Written Comment)	Page 143, Table 5.1, HA 1, V-1.2. Based on the current lack of pilot programs at PGDP to demonstrate an inability to achieve reductions in source terms and groundwater contamination it will be difficult for DOE to defend a position pursuing technical impracticability (TI) waivers.
	UK-KRCEE (Written Comment)	Page 144, Table 5.1, HA 1, V-1.4. See comment # 23. The ITRD identified a number of technologies that have the potential to significantly reduce contaminant concentrations in the dissolved phase plume.
	UK-KRCEE (Written Comment)	Page 147, Table 5.1, HA 1, V-1.5. DOE's modeling indicates that levels of ⁹⁹ Tc in groundwater that are greater than MCLs may discharge to surface water outside of the DOE property boundary. Under the RBES, how does the DOE plan to address the discharge of ⁹⁹ Tc to Little Bayou Creek in the future?
	CAB (Written Comment)	To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:
BGOU Remediation	MAJOR COMMENTS	<p>11. DOE remove sources and potential sources of off-site groundwater contamination.</p> <ol style="list-style-type: none"> 1. Current characterization of the burial grounds is inadequate to allow capping to be used as the only remedy. Capping will not work because the burial grounds are not lined, and some parts of them are below the shallow water table. Additionally, modeling has shown that capping alone would not minimize the potential for releases from the burial grounds. 2. More comprehensive human health and ecological risk assessments are needed when comparing the CPES and RBES. 3. Burial grounds are inconsistent with re-industrialization. 4. Capping is being considered to reduce cost only. 5. The report needs to consider potential changes over time in the state of the materials in burial grounds and landfills. The potential impact these changes may have on contaminant migration needs to be considered. 6. Discussions of risk and exposure pathways should emphasize that contact with waste is unlikely.

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	KDFWR (Written Comment)	V-1.3 - The CPES assumes excavation of the burial grounds. The RBES assumes capping and monitoring of the burial grounds. With limited control of groundwater movement to off-site areas, KDFWR feels that capping and monitoring the natural attenuation of groundwater contamination from the burial grounds is inadequate to address the potential impact these contaminants may have on ecological and human receptors. With no control of current or future rates of contamination into the groundwater, a non-removal activity poses a potential risk to both human and ecological receptors. While the short-term risk to worker, public, ecological receptors using the RBES may be reduced; long-term risk to all three may be much higher with a non-removal plan of action. KDFWR feels that adequate risk assessments, including ecological risk assessments, should be completed for each scenario to determine the best plan of action for the burial grounds site.
	KDFWR (Written Comment)	V-3.1 – Under the CPES certain burial grounds are to be excavated and disposed of in an offsite area. Under the RBES, the burial grounds would be capped and monitored. KDFWR believes that there has not been adequate characterization of the contaminants. KDFWR also feels that potential off site contamination may occur from the burial grounds and more site and risk characterizations should be completed to determine what affect leaving the material in the ground may have to both ecological and human receptors.
	Charles and Vicki Jurka (Written Comment)	Page 150: Hazard 3, V-3.1: Burial grounds are inconsistent with re-industrialization.
	Mark Donham and Kristi Hanson (Written Comment)	This is a cost cutting item that DOE has been trying to get into their cleanup plans for many years. There are many hundreds of tons of uranium buried in unlined trenches at the site, having been placed in barrels with PCB oils due to the pyrophoric nature of the uranium at issue. (notwithstanding the fact that the CAB was falsely told that the uranium was covered by peanut oil) There has been some testing of these trenches, and there is indication that barrels are deteriorating, and that some of the trenches penetrate into the water table and the barrels are sitting in water. To cap and leave this would be a disaster in the making. It is so likely that this area is a source of groundwater contamination that it makes no sense to wait to dig the stuff up. Besides, we never thought that the monitoring around the burial grounds was adequate to detect leaks. Like Dr. Peter Montague says, capping an unlined landfill is like putting a lid on a leaking bucket. It does no good.
	Vicki Jurka (Oral Comment Feb. 26 Workshop)	Changes in the state of materials disposed of in the landfill as they age needs to be discussed. Will the migration potential of these materials change over time? (Bill Tanner also asked second question.)
	UK-KRCEE (Written Comment)	Section 4.1.1, Page 47, "Pathways," Third Paragraph. Based on modeling it has been demonstrated that capping alone will not minimize the potential for releases from burial grounds. Modeling has indicated that caps must be tied to hydrological barriers in order to minimize infiltration and exfiltration from the burial grounds.
	UK-KRCEE (Written Comment)	Section 4.3.1, Page 58, "Pathways," First Paragraph. How is buried waste a direct contact risk?
	UK-KRCEE (Written Comment)	Section 4.3.1, Page 58, "Pathways," First Paragraph. There have been no technically sound and conclusive investigations demonstrating that contaminants are not migrating from these units to groundwater and surface water.

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	UK-KRCEE (Written Comment)	Section 4.3.1, Page 59, "Pathways," Second Paragraph. The waste is buried and the units are capped and these conditions must be reflected in exposure assumptions for the units. Physical controls of soil cover and caps would clarify the exposure and pathway discussions relative to these units.
	UK-KRCEE (Written Comment)	Section 4.6.1, Page 70, "Pathways," Second Paragraph. There have been no technically sound and conclusive investigations demonstrating that contaminants are not migrating from these units to groundwater and surface water.
	UK-KRCEE (Written Comment)	Section 4.6.2, Page 74, "Pathways," Last Paragraph. Based on modeling it has been demonstrated that capping alone will not minimize the potential for releases from burial grounds. Modeling has indicated that caps must be tied to hydrological barriers in order to minimize infiltration and exfiltration from the burial grounds.
	UK-KRCEE (Written Comment)	Page 144, Table 5.1, HA 1, V-1.3. Previous site investigations of burial grounds at the PGDP have not provided data that conclusively demonstrates whether the burial grounds are contributing to groundwater contamination. DOE should demonstrate that under the worst case scenario contamination from the burial grounds would not exceed MCLs at the fence line or the DOE property boundary. Even if there is an impact to groundwater at the fence line, the pathway for exposure is incomplete because of long-term access controls.
	UK-KRCEE (Written Comment)	Page 144, Table 5.1, HA 1, V-1.4. DOE's modeling has shown that capping without hydrological barriers will not prevent infiltration and exfiltration from the burial grounds.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 3, V-3.1. DOE has not demonstrated that these units do not contribute to groundwater contamination. DOE's modeling has shown that capping without hydrological barriers will not prevent infiltration and exfiltration from the burial grounds. See comment # 26.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 3, V-3.1. DOE should clarify that the potentially exposed individual would be an industrial worker excavating into the waste. However, this pathway seems unlikely given DOE's implementation of enhanced institutional controls.
	CAB (Written Comment)	To achieve the goal of the CAB's End State Vision, the following recommendations are submitted: 8. DOE plan and initiate removal of all burial grounds within the industrial area. The potential for contaminant migration in the air, soil, groundwater and surface water is greatly increased if the burial grounds remain. The unexcavated burial grounds will negatively impact future industrial options for the site.
SWOU Remediation	MAJOR COMMENTS	<ol style="list-style-type: none"> 1. Addressing hot spots identified using cleanup goals set at target risk of E-4 and PCBs at 25 or 1 ppm (depending on the location) will not adequately address potential ecological and human health risks. 2. Sediment control basins may be necessary if cleanup does not prevent contaminant migration. It would be better to clean up so migration is prevented. 3. More comprehensive human health and ecological risk assessments are needed when comparing the CPES and RBES. 4. The report needs to better consider risks from consumption of contaminated animals. 5. The discussion of contaminated media and exposure pathways should include bank soils. 6. If controls are necessary to minimize migration, then alternatives to sediment control basins should be considered.

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	KDFWR (Written Comment)	<p>V-2.1 – The CPES recommends removal of contaminated source sediments and soils to achieve a target risk of IE-06. The RBES assumes excavation of hotspots in sediment and soil using a target risk and PCB concentrations consistent with future land use. The RBES action in industrial areas would achieve a target risk of IE-04 to a worker and a PCB concentration of 25 ppm. The action in recreational areas would achieve a target risk of IE-04 to a recreational user and a PCB concentration of 1 ppm. KDFWR feels that the RBES does not adequately remove contamination from either on site or off site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels being left are much higher than the typically used IE-06 and 1 ppm for industrial and 0.1 ppm for residential soils and sediments.</p> <p>The list of variances states, “The magnitude of these risks under the CPES and RBES have not been assessed at this time; however, because a greater amount of material would be excavated under the CPES than under the RBES, risks to all receptors would be expected to be greater under the CPES than under the RBES.” KDFWR feels this may or may not be true based on the lack of information that has been obtained regarding both plans of action. We feel ecological and human health risk assessments should be performed to determine what potential impacts each action may have. By controlling sediment/soil migration during cleanup activities, potential movement, both onsite and offsite, can be adequately controlled.</p>
	KDFWR (Written Comment)	<p>V-2.2 – The CPES recommends the construction of 2 basins to control sediment migrations into areas outside the industrialized portion of the site. Under RBES, no such basins would be planned because hot spot removal would prevent migration of contaminated material. KDFWR feels an ecological risk assessment should be performed to determine what impacts the RBES may have on off site receptors. As stated above, the proposed levels of contamination to be left by the RBES are higher than current state levels for both the industrial and residential scenarios. Habitat destruction could be kept to a minimum in the construction of sediment basins. Properly choosing site locations for the basins may reduce impact from habitat destruction by constructing the basins in what is currently a poor habitat.</p>
	Charles and Vicki Jurka (Written Comment)	<p>Page 148: Hazard 2, V-2.1: The RBES fails to consider the hazard posed from eating “ecological receptors” after they have been exposed to long-lived PCBs in their environment.</p>
	Mark Donham and Kristi Hanson (Written Comment)	<p>Again, walking away from a commitment to try to reduce surface water discharges is a significant backtracking on the cleanup. This has implications for neighboring properties, wildlife, recreationalists, and the ecology. There will also be cumulative impacts on the discharges going into the creeks and then into the river. This also poses an incremental increase in the risk of re-contamination or cross contamination during or after some cleanup action has occurred. Again, the ultimate result of this is that more contamination will be left on site. With plans to leave the major source areas and to reduce the cleanup standards, the site will be far from clean after DOE declares the cleanup over.</p>

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	Mark Donham and Kristi Hanson (Written Comment)	V-7: We are not huge fans of the larger sediment control basins, because we believe that they have a potential for becoming another source of groundwater contamination. The key is to reduce the contamination going into the watershed – not trying to catch it once it has entered the water. At that point the damage has been done and it is much more difficult to capture the contaminant. So the focus should be on stopping the contaminants from entering the watershed, in our opinion.
	UK-KRCEE (Written Comment)	Section 4.2.1, Page 50, “Pathways,” Third Paragraph and Section 4.2.2, Page 57, Third Paragraph. This discussion is not entirely correct. Under current conditions, exposures are attributable to bank soils, sediments, scrap metal, and surface water. Without removal of or barriers to contact with bank soils, continued releases having the potential to impact public health will occur.
	UK-KRCEE (Written Comment)	Section 5.1.2.2, Page 132, “Pathways,” 2nd Paragraph. Recent investigations to collect and evaluate data on the distribution of contaminants in the NSDD have demonstrated that bank soils are the primary source of contaminant releases in the ditches. A barrier to continued releases of contaminants from bank soils would and should be real-time identification and removal of hot spots.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 2, V-2.2. Removal of hot spots negates the necessity for sediment basin in drainage channels. If it is determined that controls are necessary to minimize sediment releases, alternative technologies such as those proposed by Dr. Richard Warner/UK should be evaluated because of the significant cost savings.
SOU Remediation	MAJOR COMMENT 1. Addressing hot spots identified using cleanup goals set at target risk of E-4 and PCBs at 25 or 1 ppm (depending on the location) will not adequately address potential ecological and human health risks. 2. Existing data indicates that migration from soil areas is continuing.	
	KDFWR (Written Comment)	V4.1, 8.1, 9.2 - The CPES assumes excavation of contaminated soils to achieve the target risk of 1E-06 under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavation of hot spots in soil using a target risk of 1E-04 under a worker scenario with concentrations of PCBs 25 ppm. KDFWR feels that the RBES does not adequately remove contamination from either on site or off site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils and sediments.
	UK-KRCEE (Written Comment)	Section 5.1.4.2, Page 134, “Pathways,” First Paragraph. Data exists that establishes past and continuing migration of surface soil and contaminants.
Permitted Landfills	MAJOR COMMENTS 1. The “P-Landfill” (located under the S- and T-Landfills) needs to be discussed. 2. The landfills are leaking and this is a point of contention with the public. 3. Changes in the state of materials over time need to be discussed. This discussion should include the impact changes may have on contaminant migration. 4. Additional discussion of risks at the C-746-U Landfill is needed.	

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	Charles and Vicki Jurka (Written Comment)	Pages 40 and 142 through 159: Hazard area 5 includes closed and operating landfills. There are three (P), not two, closed landfills in this industrialized landfill area. These landfills are leaking. They are closer to the residential receptor than any other PGDP/DOE facility. They sit atop a seismically active area. By their very nature, they pose both current and future risk. The operating landfill (C-746-U) is the primary disposal option for legacy waste, in storage DMSAs, at PGDP. The potential for future expansion of this landfill is great: ongoing EM, proposed D&D, as well as DUF-6 conversion activities drive this concern. These landfills are a contentious community issue. "Table 5.1 Variance Report by Hazard Area" completely ignores these hazards. Changes in the state of materials disposed of in the landfill as they age needs to be discussed. Will the migration potential of these materials change over time? (Bill Tanner also asked second question.)
	Vicki Jurka (Oral Comment Feb. 26 Workshop)	Would like to see additional discussion of risks at C-746-U Landfill in the RBES. Concerned that DOE is concentrating waste streams by using the landfill.
Legacy Waste	MAJOR COMMENTS	1. Additional detail is needed concerning migration from legacy wastes and DMSAs.
	UK-KRCEE (Written Comment)	Section 4.7, Page 74, "Pathways," First Paragraph. What DMSAs and legacy wastes have been or are contaminating soils, surface water, etc.?
Cylinder Yards and Conversion Facility	MAJOR COMMENTS	1. Cylinder yards discussion should note that the primary risk is external exposure to gamma radiation. 2. "Hot spot" excavation would be a cost-effective response action.
	UK-KRCEE (Written Comment)	Section 4.8.1, Page 77, "Sources." In the cylinder, yards the primary sources of exposure are clearly the cylinders containing DUF ₆ . Direct exposure to the gamma radiation from the cylinders and not the soils is the primary pathway of concern for the cylinder yards. There have been only a few breaches and possible release of DUF ₆ from the 30,000+ cylinders in the yards. Therefore, contamination of soil zones from Hazard Area 8 should be minor and restricted to a few hot spots.
	UK-KRCEE (Written Comment)	Page 155, Table 5.1, HA 8, V-8.1. Based on the number of cylinders breached, excavation of hot spots would be cost-effective and accelerate cleanup subsequent to removal of the DUF6 cylinders. Risk assessments have demonstrated that even under a no action scenario, the cylinder yards pose minimal risk.
Institutional Controls	MAJOR COMMENTS	1. The actions included in and the mechanism to be used to for "enhanced institutional controls" are not adequately described. 2. The only protective option is for DOE to purchase all affected properties. 3. It is not clear if "enhanced institutional controls" will be protective of ecological receptors and environmental resources (e.g., wetlands). 4. The relationship between the current PGDP Water Policy and "enhanced institutional controls" needs to be clarified.
	KDFWR (Written Comment)	It is unclear as to the mechanism for enhanced institutional controls for non-DOE and DOE owned property. Will this involve deed restrictions or similar legal arrangement for non-DOE owned property?

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	Charles and Vicki Jurka (Written Comment)	DOE and its contractors contaminated the landowners groundwater; destroying a self-sufficient economic option for landowner water-production. DOE then ameliorated this harm through the Water Policy, by paying the costs associated with a new source of "clean" water. The extensive and expansive degree of groundwater contamination, under the current proposed remedial actions, will remain for many generations to come. In all likelihood, legal instruments will not bridge this generational span. The inherent failures of both current and risk-based proposals necessitates the exploration of other options. The most fail-safe, long-range, cost-effective option is the purchase and subsequent DOE control of "real estate" from all Water Policy landowners.
	KDFWR (Oral Comment Feb. 26 Workshop)	Are the enhanced institutional controls proposed consistent with future use of some areas as wetland habitat?
	KDFWR (Oral Comment Feb. 26 Workshop)	Current enhanced institutional control discussion needs to be reviewed and improved.
	Bill Tanner (Oral Comment Feb. 26 Workshop)	Will the enhanced institutional controls result in moving the current PGDP Water Policy box? Will the west boundary of the box be moved closer to the PGDP and the east boundary be moved further from the PGDP?
	Vicky Jurka (Oral Comment March 11 Workshop)	Questioned how DOE can justify purchasing property as part of enhanced institutional controls if property is not contaminated. If property is purchased, then all property owners need to be treated equally.
	Ruby English (Oral Comment March 11 Workshop)	Questioned how DOE would compensate property owners if deed restrictions become part of the enhanced institutional controls. Recommended that DOE hold a series of meetings explaining the reason for and methods to be used to implement institutional controls.
	Vicky Jurka (Oral Comment March 11 Workshop)	Stated that the CAB has produced and distributed letter asking property owners about their feelings concerning property purchase.
	Bill Tanner (Oral Comment March 11 Workshop)	Stated that the CAB started working on recommendations concerning property purchase 2 years ago. CAB will revisit again soon and would like to see final resolution of issue within 2 years.
	Vicky Jurka (Oral Comment March 11 Workshop)	Stated that other DOE locations have used an entity like PACRO when purchasing property.
	John Anderson (Oral Comment March 11 Workshop)	Requested that DOE provide information regarding property purchase at other DOE facilities.
	UK-KRCEE (Written Comment)	Page 142, Table 5.1, HA 1, V-1.1. Enhanced institutional controls provide an excellent approach for control of long-term groundwater usage. However, this should not preclude evaluation and implementation of technologies to reduce source terms and dissolved phase contamination at the PGDP.

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	UK-KRCEE (Written Comment)	Page 148, Table 5.1, HA 2, V-2.1. Because of the implementation enhanced institutional controls under the RBES, the target risk in industrial areas should be set at 1E-4.
	CAB (Written Comment)	To achieve the goal of the CAB's End State Vision, the following recommendations are submitted: 9. DOE, within two years, resolve the issue of institutional controls, compensation, or "buy out" with the property owners affected by off-site groundwater contamination.
Land Use	MAJOR COMMENTS	
	1. Future industrial use of the site, including reindustrialization, has considerable support; however, other uses for areas identified as future recreational should be considered.	
	2. KDFWR would like to see land deeded to them and not leased under the CPES and RBES.	
	3. Land use map (i.e., Recreational use outside the fence) is inconsistent with McCracken County zoning.	
	PACRO (Written Comment)	2. PACRO supports the industrial land use for areas currently viewed as industrial. 3. PACRO supports more flexibility in the designation of use for the remaining DOE property other than exclusively recreational. PACRO supports the ownership of that property being transferred to a local industrial development agency that upon clean up to recreational standards has the flexibility to reuse portions of that property for reindustrialization.
	CAB/SUN (Written Comment)	...the board recommends that: Work start immediately with DOE, PACRO, and the Greater Paducah Economic Development council to determine which plant buildings have potential for other industrial use. They should not be torn down but cleaned up to be safe enough for new occupants. Governmental laws be checked so that new tenants aren't liable for past contamination. Brownfield regulations exclude superfund sites such as the Paducah plant, but DOE regulations do indemnify certain companies that use government property.
	KDFWR (Written Comment)	Figure 3.3b – Site Legal Ownership – RBES. This figure indicates land currently leased to WKWMA will continue to be leased to KDFWR, not deeded to the state. While the current lease agreement would remain adequate, KDFWR would be interested in obtaining ownership of the property if the area meets or exceeds state and/or federally issued criteria for cleanup for recreational use.
	Charles and Vicki Jurka (Written Comment)	Anticipated recreational use for areas outside the fence is inconsistent with McCracken County zoning ordinance.

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Cleanup Levels	Steven Doolittle, McCracken County Administrator (Written Comment)	On behalf of McCracken County, we wish to add these comments to the land use portion of the End State Visioning process. We support DOE's general determination that current land uses should be maintained. That is, industrial lands should remain industrial and recreational land uses should be maintained. However, we would offer that flexibility should be put in place so that some of the open recreational or open space lands could be offered for some industrialization/reindustrialization opportunities. Local planning agencies should at least be allowed an opportunity at some future point to decide if a re-use of recreational or open area is appropriate. We recognize DOE's hard work in this area and appreciate the opportunity to be heard.
Cleanup Levels	MAJOR COMMENTS 1. Cleanup to standards consistent with future land use is needed. 2. Cleanup levels for recreational areas should meet or exceed those based on state and/or federally issued criteria for cleanup. 3. Proposed cleanup levels under the RBES are much higher than the levels typically used for industrial and residential soils and sediments. 4. Cleanup standards need to consider ecological receptors. 5. Cleanup standards for PCBs listed in the report are not consistent with state's cleanup goal. 6. Point of compliance for actions should be consistent with that used at other sites in Kentucky (i.e., the property boundary). 7. Cleanup levels should be based on regulation and not policy.	3. PACRO supports more flexibility in the designation of use for the remaining DOE property other than exclusively recreational. PACRO supports the ownership of that property being transferred to a local industrial development agency that upon clean up to recreational standards has the flexibility to reuse portions of that property for reindustrialization. ...the board recommends that:
Cleanup Levels	PACRO (Written Comment)	Work start immediately with DOE, PACRO, and the Greater Paducah Economic Development council to determine which plant buildings have potential for other industrial use. They should not be torn down but cleaned up to be safe enough for new occupants.
Cleanup Levels	CAB/SUN (Written Comment)	Figure 3.3b – Site Legal Ownership – RBES. This figure indicates land currently leased to WKWMA will continue to be leased to KDFWR, not decided to the state. While the current lease agreement would remain adequate, KDFWR would be interested in obtaining ownership of the property if the area meets or exceeds state and/or federally issued criteria for cleanup for recreational use.
Cleanup Levels	KDFWR (Written Comment)	V-2.1 – The CPES recommends removal of contaminated source sediments and soils to achieve a target risk of 1E-06. The RBES assumes excavation of hotspots in sediment and soil using a target risk and PCB concentrations consistent with future land use. The RBES action in industrial areas would achieve a target risk of 1E-04 to a worker and a PCB concentration of 25 ppm. The action in recreational areas would achieve a target risk of 1E-04 to a recreational user and a PCB concentration of 1 ppm. KDFWR feels that the RBES does not adequately remove contamination from either on site of off site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels being left are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils and sediments.

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(This summary includes all comments received from the public, public organizations, and the regulatory agencies before March 11, 2005)

Category	Commentor:	Comment
	KDFWR (Written Comment)	V4.1, 8.1, 9.2 - The CPES assumes excavation of contaminated soils to achieve the target risk of 1E-06 under a residential scenario and a PCB concentration of 1 ppm. The RBES assumes excavation of hot spots in soil using a target risk of 1E-04 under a worker scenario with concentrations of PCBs 25 ppm. KDFWR feels that the RBES does not adequately remove contamination from either on site or off site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils and sediments.
	KDFWR (Written Comment)	V-7.1 – Both the CPES and RBES allow for removal of waste and debris within the legacy waste storage areas. The CPES is covered under an agreed order stating the final closure of the sites must achieve a Hazard Index (HI) of 1 and a 1E-06 for closure without the use of engineering barriers or institutional controls. The RBES excavated soils or surface areas would target areas to a HI of 1 and 1E-04 under an industrial scenario with PCB target levels of 25 ppm. KDFWR feels that the RBES does not adequately remove contamination from on site areas. With limited control of PCB movement through surface water, the potential for ecological exposures to exceed current acceptable levels is elevated. For example, under the RBES, the proposed levels are much higher than the typically used 1E-06 and 1 ppm for industrial and 0.1 ppm for residential soils under the agreed order.
	Mark Donham and Kristi Hanson (Written Comment)	We oppose a blanket relaxing of cleanup standards for pebs. This will result in many pounds of pebs being left on site – 25 times more to be exact. PCBs have been found in higher than average levels in virtually every living creature that has been tested around the plant. This means they likely are in the workers also, in the dust, in the water. There needs to be diligence in trying to reduce the pcb exposure to the ecology in the area. In addition, this does not address the private lands which have or may have been contaminated by the plant. Any comprehensive cleanup plan should deal with contaminated private lands.
	KDFWR (Oral Comment Feb. 26 Workshop)	Ecological risk discussions need to be added to the document.
	KDFWR (Oral Comment Feb. 26 Workshop)	It is not clear how DOE can clean to ecological standards when an ecological risk assessment has not been performed.
	KYDEP (Oral Comment Feb. 26 Workshop)	Generally, the current planned end state presented in the report is inconsistent with the state’s current cleanup plan. Specifically, the state’s cleanup goal for PCBs in sediment is 0.1 ppm and not 1 ppm as presented in the report. The 0.1 ppm value is taken from the Rockwell court case decision.
	KDFWR (Oral Comment March 11 Workshop)	Requested that the discussion of ecological risk in the RBES include ecological cleanup levels.
	UK-KRCEE (Written Comment)	Section 4.3.1, Page 60, “Pathways,” Table 4.5. Explain how ²²⁸ Th is considered without considering the other nuclides in the ²³² Th decay chain.
	UK-KRCEE (Written Comment)	Section 4.6.1, Page 71, “Pathways,” Table 4.7. See comment 11.

COMMENTS ON
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Category	Commentor:	Comment
	UK-KRCEE (Written Comment)	Section 5.1.9.3, Page 134, "Projected Risk Levels," First Paragraph. Based on reasonable assumptions for future land use, the target risk level for cleanup of soils within the restricted area should be based on industrial and not residential exposures.
	UK-KRCEE (Written Comment)	Section 5.2, Page 140, Bullets. Concur with projected radiological and non-radiological cleanup levels for future industrial and recreational use designations at the PGDP. However, if the facilities within the restricted area are to be free released and not under the control of the Department of Energy, more restrictive state and/or federal cleanup levels should be applicable.
	UK-KRCEE (Written Comment)	Page 143, Table 5.1, HA 1, V-1.2. Based on the point of compliance established by the RCRA/CERCLA remediation at the Maxey Flats Nuclear Disposal Site, the PGDP point of compliance should be the DOE property boundary.
	UK-KRCEE (Written Comment)	Page 148, Table 5.1, HA 2, V-2.1. The target risk levels within the restricted area should be based on reasonable future land use which has been established as industrial.
	UK-KRCEE (Written Comment)	Page 148, Table 5.1, HA 2, V-2.1. Under KRS 13A "policy" cannot be used establish a standard in the Commonwealth. A standard must be promulgated in an administrative regulation.
	UK-KRCEE (Written Comment)	Page 148, Table 5.1, HA 2, V-2.1. Because of the implementation enhanced institutional controls under the RBES, the target risk in industrial areas should be set at 1E-4.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 4, V-4.1. We concur with DOE's position to remove hot spots within the restricted area using a target risk of 1E-4. It is not reasonable to apply a residential target risk of 1E-6 to remediation activities conducted within the restricted area.
	UK-KRCEE (Written Comment)	Page 154, Table 5.1, HA 7, V-7.1. Future land use for the restricted area has been agreed to as industrial. Therefore, it is unreasonable to set a residential target risk of 1E-6. Enhanced institutional controls would preclude the construction of residential housing units in this restricted area.
CERCLA Cell	MAJOR COMMENTS <ol style="list-style-type: none"> 1. A more detailed study of the CERCLA Cell is appropriate. 2. Alternatives to the CERCLA Cell for long-term storage (e.g., indoor storage) of waste need to be considered. 3. The CERCLA Cell is opposed by some, and it is only mentioned to allow more liberal use of the C-746-U Landfill. 4. The United States Geological Service (USGS) should be involved in the preparation of the document. 5. Seismic issues discussed in the report should be consistent with recently developed information. 	<p>V-5.1 – The CPES does not include the potential construction of a CERCLA Cell for on-site disposal of CERCLA-derived wastes. The RBES includes the potential construction of the facility. The KDFWR believes that a more detailed study should be conducted to determine the feasibility of a CERCLA Cell onsite. This study should address the concerns put forth by the Commonwealth of Kentucky.</p>
	KDFWR (Written Comment)	

COMMENTS ON
Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
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Category	Commentor:	Comment
	Mark Donham and Kristi Hanson (Written Comment)	We are not in favor of the CERCLA cell. However, we fear that this variance is being used as a way to only shift plans for dumping to the 746U landfill, which we are not in favor of either. We do not think that the Paducah site is a good landfill site for such long lived contaminants being so close to a major river. We thank (sic) the idea of using some of the existing buildings as containment facilities should be looked at more, but that the focus should be on better quality containment facilities for the contaminants. What needs to be done is that the contaminants need to be removed from the open environment and contained in facilities that have floors and the capability of observing leaks as soon as they occur with easy remediation. If some of the existing buildings could be modified in some way to accomplish this, then that is certainly something to look at. If new facilities need to be built to adequately contain the contamination, then the agency should build them.
	Charlie Quinton (Oral Comment Feb. 26 Workshop)	Is the USGS involved in the preparation of the document? They may have data that would be useful (i.e., seismic information).
	UK-KRCEE (Written Comment)	Section 2.3, Page 15, First Paragraph. The statement relative to identification of recent faulting is not correct based on the present state of knowledge and information disseminated to all involved parties. See memorandum of February 26, 2004 from Hampson to Murphie regarding the status of seismic investigations and seismic assessments at the PGDP and its environs.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 5, V-5.1. Climatological conditions are addressed in engineering design and do not preclude the construction of a potential CERCLA Cell.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 5, V-5.1. IS NREPC uniformly applying seismic regulatory requirements to all permitted facilities?
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 5, V-5.1. Technical experts do not agree that seismic conditions at the PGDP preclude the construction of a potential CERCLA Cell. See memorandum of February 26, 2004 from Hampson to Murphie regarding the status of seismic investigations and seismic assessments at the PGDP and its environs.
	UK-KRCEE (Written Comment)	Page 149, Table 5.1, HA 5, V-5.1. In addition to engineering controls to address climatological and seismic issues, control of waste forms can minimize the potential for release from the CERCLA Cell.
	CAB (Written Comment)	To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:
		7. DOE should investigate all possible alternatives to the proposed Comprehensive Environmental Recovery, Compensation, and Liability Act (CERCLA) waste disposal facility. There are four gaseous diffusion process buildings that have little, if any, potential for reindustrialization. The footprints of these buildings could be used for an above-ground concrete encapsulation of final D&D waste. This option is more acceptable to the community and may lower long-term costs for both Environmental Management (EM) and Legacy Management (LM).

COMMENTS ON
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Category	Commentor:	Comment
Reindustrialization	<p>MAJOR COMMENTS</p> <ol style="list-style-type: none"> 1. Reindustrialization should be considered. Transfer of property and reuse of buildings is supported. 2. For reindustrialization to work, liability of new tenants needs to be determined. 3. Reindustrialization will be impossible if the groundwater and burial ground problems are not addressed. 4. If contamination is left in place, then the impact of future releases from other (new) processes needs to be considered. 5. Before initiating reindustrialization, a master plan is needed for all structures and areas. 	<p>3. PACRO supports more flexibility in the designation of use for the remaining DOE property other than exclusively recreational. PACRO supports the ownership of that property being transferred to a local industrial development agency that upon clean up to recreational standards has the flexibility to reuse portions of that property for reindustrialization.</p> <p>...the board recommends that:</p>
	<p>PACRO (Written Comment)</p>	<p>Work start immediately with DOE, PACRO, and the Greater Paducah Economic Development council to determine which plant buildings have potential for other industrial use. They should not be torn down but cleaned up to be safe enough for new occupants.</p> <p>Governmental laws be checked so that new tenants aren't liable for past contamination. Brownfield regulations exclude superfund sites such as the Paducah plant, but DOE regulations do indemnify certain companies that use government property.</p>
	<p>CAB/SUN (Written Comment)</p>	<p>Director John Anderson said a chief PACRO concern is the condition of buildings and other resources that make the plant marketable. Among other things, the group wants to clean and recycle contaminated nickel, but there is a national safety ban by DOE on putting scrap metal at its plants into commercial use.</p> <p>"This should be of great concern to Paducah," he said, "because there is going to be no reindustrialization of that site with a contaminated groundwater plume under it and uranium still buried there."</p> <p>Page 150: Hazard 3, V-3.1: Burial grounds are inconsistent with re-industrialization.</p>
	<p>Mark Donham/SUN (Written Comment)</p> <p>Charles and Vicki Jurka (Written Comment)</p> <p>Vicki Jurka (Oral Comment Feb. 26 Workshop)</p>	<p>The document needs to consider how future industrial releases from other (new) processes may affect DNAPL releases in the future. This interaction may limit future use of the site.</p>

COMMENTS ON
Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
(DOE/OR/07-2119&D0/R2)

(This summary includes all comments received from the public, public organizations, and the regulatory agencies before March 11, 2005)

Category	Commentor:	Comment
	CAB (Written Comment)	<p>To achieve the goal of the CAB's End State Vision, the following recommendations are submitted:</p> <ol style="list-style-type: none"> 1. DOE is encouraged to structure environmental remediation activities to allow continued nuclear and non-nuclear industrial use of the existing industrialized area and to continue recreation/wildlife use of those areas presently leased to the WKWMA. 2. DOE begin investigating means to modify security access to non-USEC leased areas, allowing the reindustrialization process to move forward. 3. DOE begin consultation with PACRO, GPEDC, and other involved parties to inventory and investigate buildings and facilities to determine potential reindustrialization value. 4. DOE decontaminate the buildings, facilities, and surrounding grounds (scheduled for reuse) to the level necessary to allow this community every opportunity to obtain non-nuclear tenants for the site. 5. DOE begin physical rehabilitation of infrastructure facilities identified as having potential for the reindustrialization process. 6. DOE thoroughly characterize any contamination remaining at the site and adjoining property, after all environmental remediation activities are complete. This will allow the issuance of state and federal "covenant not to sue," or an equivalent document, for future tenants and property owners. 7. DOE should investigate all possible alternatives to the proposed Comprehensive Environmental Recovery, Compensation, and Liability Act (CERCLA) waste disposal facility. There are four gaseous diffusion process buildings that have little, if any, potential for reindustrialization. The footprints of these buildings could be used for an above-ground concrete encapsulation of final D&D waste. This option is more acceptable to the community and may lower long-term costs for both Environmental Management (EM) and Legacy Management (LM). 8. DOE plan and initiate removal of all burial grounds within the industrial area. The potential for contaminant migration in the air, soil, groundwater, and surface water is greatly increased if the burial grounds remain. The unexcavated burial grounds will negatively impact future industrial options for the site.
Site Description	<p>MAJOR COMMENTS</p> <ol style="list-style-type: none"> 1. The explanation concerning the reason for management practices needs to be corrected. 2. The reason why some contamination originates from Ohio River water needs to be better explained. <p>KDFWR (Written Comment)</p> <p>Charles and Vicki Jurka (Written Comment)</p>	<p>Section 3.2.1 – The Ecological Activities Section states that vegetation is managed for consumption by wildlife, especially deer. While the vegetative management practices on West Kentucky Wildlife Management Area (WKWMA) do benefit most wildlife, upland habitat is managed more so for the northern bobwhite (<i>Calinus virginianus</i>) and should replace deer as the inferred primarily managed species.</p> <p>Page 12 (para. Above 2.1.2): This paragraph requires clarification. (This paragraph is presented below.)</p> <p>“The sediments found in water taken from the Ohio River for use as cooling water are a source of potential contamination at the PGDP. These sediments have been contaminated with PCBs through upstream industrial discharges, and flocculated materials (i.e., sludge) at the PGDP water treatment plant, which treats water taken from the Ohio River, often contain levels of PCBs and metals above PGDP-specific no action levels taken from DOE 2000a.”</p>

COMMENTS ON
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Category	Commentor:	Comment
Figure Error	MAJOR COMMENT 1. Errors were identified. All figures need to be checked.	There appears to be a misprint in the figure legend. It shows red points having PCB levels below 25 ppm. When compared to the other two point levels, this should actually read PCB above 25 ppm.
	KDFWR (Written Comment)	Page 44 (risk levels): Fig. 4.1a2 is referenced but does not appear in this draft document (our copy). This appears to be an important reference when determining exposure pathways.
	Charles and Vicki Jurka (Written Comment)	

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Attachment 17

**SUMMARY OF CHANGES MADE TO EARLIER DRAFTS OF THE
PGDP RBES IN RESPONSE TO STAKEHOLDER COMMENTS**

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**Summary of Changes Made to
Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
(DOE/OR/07-2119&D0/R2)
in Response to Stakeholder Comments**

Category	Change
General	<ul style="list-style-type: none"> • Additional risk summary tables, including tables concerning ecological risks, added. • Document was reviewed to remove inconsistencies. • Discussions of the sustainability of response actions added. This discussion notes that source removal is the most sustainable response action. • Sizes of source areas added and checked as appropriate. • Added information covering the trade-off in risks between potential response actions planned under the RBES and planned under the current planned end state. (This discussion of risk balancing is included in the tables describing the potential response action planned under the RBES and the current planned end state to address site risks.)
Document Preparation	<ul style="list-style-type: none"> • Additional time has been added to the document preparation schedule to allow for increased public participation. • The document has been edited and repetitive information has been deleted. In addition, summary tables were added. • A public participation appendix was added to the revised document. This appendix includes a listing of all public participation activities, copies of handouts and viewgraphs used at meetings, copies of written comments, and summaries of comments received ordered by category.
GWOU Remediation	<ul style="list-style-type: none"> • Additional discussion of the current PGDP Water Policy was added to the report, including the relationship between the current water policy and potential “enhanced institutional controls. • A source action at the primary groundwater source area was added to the RBES. • The current basis for the TI waiver (i.e., national performance data and presence of other contaminants in groundwater, such as metals) was added to the variance discussion. • A discussion of geology and hydrology added to the report. • A discussion of the plume and its past and potential future migration was added to the RBES. • Additional discussion of the ⁹⁹Tc plume was added.
BGOU Remediation	<ul style="list-style-type: none"> • The revised discussion of risks posed by waste found in the landfill emphasizes that contact with waste is unlikely.
SWOU Remediation	<ul style="list-style-type: none"> • Bank soil was added as a medium of concern. • A discussion of risks posed by consumption of game was added.
SOU Remediation	<ul style="list-style-type: none"> • No specific changes in response to comments received.
Permitted Landfills	<ul style="list-style-type: none"> • A discussion of the “P-Landfill” was added. • Document was reviewed to ensure that RBES included mechanisms to monitor for future releases.
Legacy Waste	<ul style="list-style-type: none"> • No specific changes made in response to comments received.
Cylinder Yards and Conversion Facility	<ul style="list-style-type: none"> • Discussion of risks from external exposure to gamma radiation added to the revised RBES.
Institutional Controls	<ul style="list-style-type: none"> • Major revisions made in the description of “enhanced institutional controls.” • The relationship between the current water policy and potential “enhanced institutional controls” clarified.
Land Use	<ul style="list-style-type: none"> • No specific changes made in response to comments received. • Discrepancies between the current zoning and future land-use maps discussed.

**Summary of Changes Made to
Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
(DOE/OR/07-2119&D0/R2)
in Response to Stakeholder Comments**

Category	Change
Cleanup Levels	<ul style="list-style-type: none"> ● Discussion concerning status of cleanup standards for ecological receptors added. ● Discussions of proposed point of compliance under the RBES and its basis added.
CERCLA Cell	<ul style="list-style-type: none"> ● Additional discussion of the CERCLA Cell as only one option for waste disposal added. ● Seismic discussion modified to address recent information on seismic issues.
Reindustrialization	<ul style="list-style-type: none"> ● Discussion about actions that may occur under D&D added. This discussion recognizes that reuse of some facilities may be possible.
Site Description	<ul style="list-style-type: none"> ● Explanation concerning management practices corrected. ● Discussion of Ohio River water as a potential source of PCB contamination revised. ● Descriptions of locations of ecological resources added.
Variance Discussion	<ul style="list-style-type: none"> ● Schedule, cost, and risk information added to Table 5.2 (Table 5.4 in the revised report). ● Maps summarizing the RBES and CPES added provided as support to variance discussions. ● Enhanced the discussion of the challenges that could prevent DOE from attaining agreement with stakeholders to pursue the RBES as opposed to the current planned end state. ● Enhanced the discussion of the ways in which DOE can work with stakeholders to address the challenges preventing agreement to pursue the RBES as opposed to the current planned end state.
Figure Error	<ul style="list-style-type: none"> ● Editorial corrections made in response to specific comments. ● Complete edit of document performed.

**Summary of Changes Made to
Risk-Based End State Vision and Variance Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
(DOE/OR/07-2119&D2/R2)
in Response to Stakeholder Comments**

Category	Change
Figure Error	<ul style="list-style-type: none"> • Editorial corrections made in response to specific comments. • Complete edit of document performed.
General	<ul style="list-style-type: none"> • Revised title to be consistent with notes from DOE RBES Next Steps Workshop (contained in Attachment 6 to the Appendix). • Changed RBES to “potential end state alternative” throughout document to be consistent with a recommendation in notes from DOE RBES Next Steps Workshop. • Included statements in document that notes that the End State Vision Document is a dynamic report that will be updated annually to reflect actual decisions from the ongoing CERCLA process at the PGDP.
Document Preparation	<ul style="list-style-type: none"> • Revised appendix to direct public to location where the D2R3 revision of the End State Vision Document is available for review.

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Attachment 18
STATUS OF THE END STATE VISION PROCESS
FOR THE PADUCAH GASEOUS DIFFUSION PLANT
STAKEHOLDER UPDATE
OCTOBER 18, 2005

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*Status of the
End State Vision Process
for the
Paducah Gaseous
Diffusion Plant*

*Stakeholder Update
October 18, 2005*

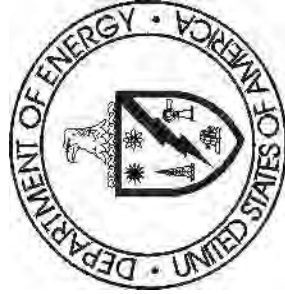


U.S. Department of Energy Notice of Availability 2005 END STATE VISION UPDATE

The U. S. Department of Energy (DOE) has issued the 2005 End State Vision Annual Update for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-2119&D2R3). This document updates the Draft Risk-Based End State Vision and Variance Report (DOE/OR/07-2119&D2R2) published in 2004. The End State Vision document will be updated annually to communicate the end state vision; address comments received from stakeholders, including the general public; and reflect current environmental cleanup efforts and decisions.

A public meeting will be held at 6:30 p.m., Tuesday, October 18 at the Environmental Information Center, 115 Memorial Drive, Paducah, Kentucky, to discuss the 2005 End State Vision Annual Update with stakeholders. Comments are encouraged, and may be sent to David Dollins, U.S. Department of Energy, P.O. Box 1410, Paducah, KY 42001. Mr. Dollins may also be contacted at (270) 441-6819.

Document Availability: The 2005 End State Vision Annual Update is now available for review at the Environmental Information Center; the McCracken County Public Library, 555 Washington Street, Paducah, Kentucky; and online at http://www.bechteljacobs.com/pad_reports.shtml.





Meeting Objectives

- Provide general background and history.
- Summarize major changes associated with the FY2005 Annual Update.
- Respond to public comments and questions.
- Outline recent cleanup activities affecting future annual updates.



Document Description

- A planning tool, updated annually, to assure today's environmental cleanup efforts are protective for tomorrow's reasonably foreseeable future use of the site (i.e., industrial, recreational, residential):
 - The document is not a decision document.
- Identifies the potential contaminants and hazards as they currently exist.
- Identifies variances between currently planned end state and potential alternative end state.



Document History - Summary

- First draft issued January 31, 2004.
- Public Meeting to introduce End State Project held February 5, 2004.
- Public Workshops held February 26 and March 11, 2004.
- Second draft issued April 30, 2004.
 - Placed on EIC public web site on April 30, 2004.
 - Placed in EIC and McCracken County Public Library on April 30, 2004.
- DOE-PPPO letter sent to various organizations on June 1, 2004.
- Public Workshop offered June 3, 2004.
- DOE Workshop held October 6 and 7, 2004.
- 2005 End State Vision Annual Update for PGDP issued August 28, 2005.
 - Placed on EIC public web site on August 28, 2005 at this address:
 - http://www.bechteljacobs.com/pad_reports.shtml.
 - Placed in EIC and McCracken County Public Library on August 28, 2005.

Full history of Public Participation, including lists of comments received, is presented in the Appendix to the 2005 End State Vision Annual Update.



Summary of FY 2005 Annual Update

- Did not make substantive changes to the end state alternatives, variances, or risk balancing.
- Added discussion of dynamic nature of document and indicated it will be updated annually to reflect cleanup decisions from the ongoing CERCLA process and to incorporate public comments on the end state process.
- Updated Appendix to include notes from the DOE October 2004 Workshop and slides from presentations made since the release of the second draft of the End State Vision Document.
- Revised document title and related references to Risk-based End State to be consistent with notes from DOE October 2004 Workshop:
 - Changed title from “Risk-based End State” to “End State Vision” and the acronym “RBES” to “end state alternative.”

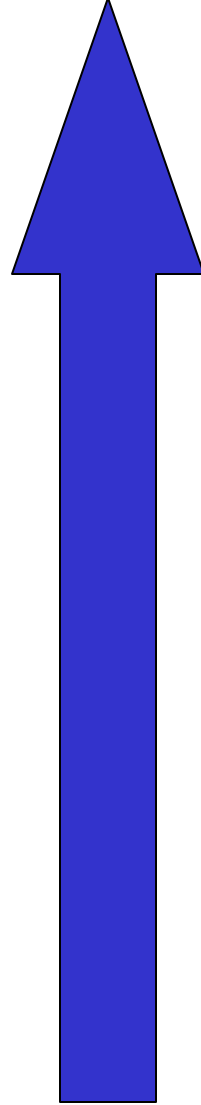


FY 2006 Annual Update Process

- Incorporate recent cleanup activities, such as:
 - ROD for C-400 Cleaning Building TCE Source Remediation signed, selecting Electrical Resistance Heating technology.
 - Field work initiated for the Site Investigation for On-Site Ditches and NSDD (outside the security fence).
 - Completed the Site Investigation of the Southwest Plume and issued report to EPA and Kentucky for review and approval.
- Incorporate any public comments received on FY 2005 document.
- Continue to notify public and solicit stakeholder comments on future updates to End State Vision Document.



BACKUP SLIDES





Major Variances

Current Planned End State Actions	End State Alternative Actions
Continuation of Water Policy (short-term agreements with existing property owners).	Enhanced Institutional Controls (e.g., legal deed restrictions, property purchases).
Reduce TCE concentration at primary and secondary sources (e.g., C-400, C-720, SWMU 1) using treatment.	Reduce TCE concentration at primary source of off-site contamination (i.e., C-400) using treatment.
Excavate some burial grounds and cap remaining. Continue monitoring and access controls.	Cap all burial grounds. Continue monitoring and access controls.
Soil Cleanup Levels - clean industrial areas to residential levels.	Soil Cleanup Levels - clean industrial areas to industrial levels.
Sediment Cleanup Levels - clean industrial areas to residential levels.	Sediment Cleanup Levels - clean industrial areas to industrial levels.
Characterization and on- and off-site disposal of legacy waste.	Same
D&D of facilities and infrastructure followed by on- and off-site disposal of debris.	Same



Examples of Risk Balancing

- Individuals and wildlife can be put at risk both by contamination in the environment and by attempts to clean up the contamination.
- More intrusive cleanup methods (e.g., excavation and disposal) may be more permanent (because they remove the contaminants), but can result in greater near-term risks to workers, the public, and the environment during implementation.



FY 2006 Appropriations Bill

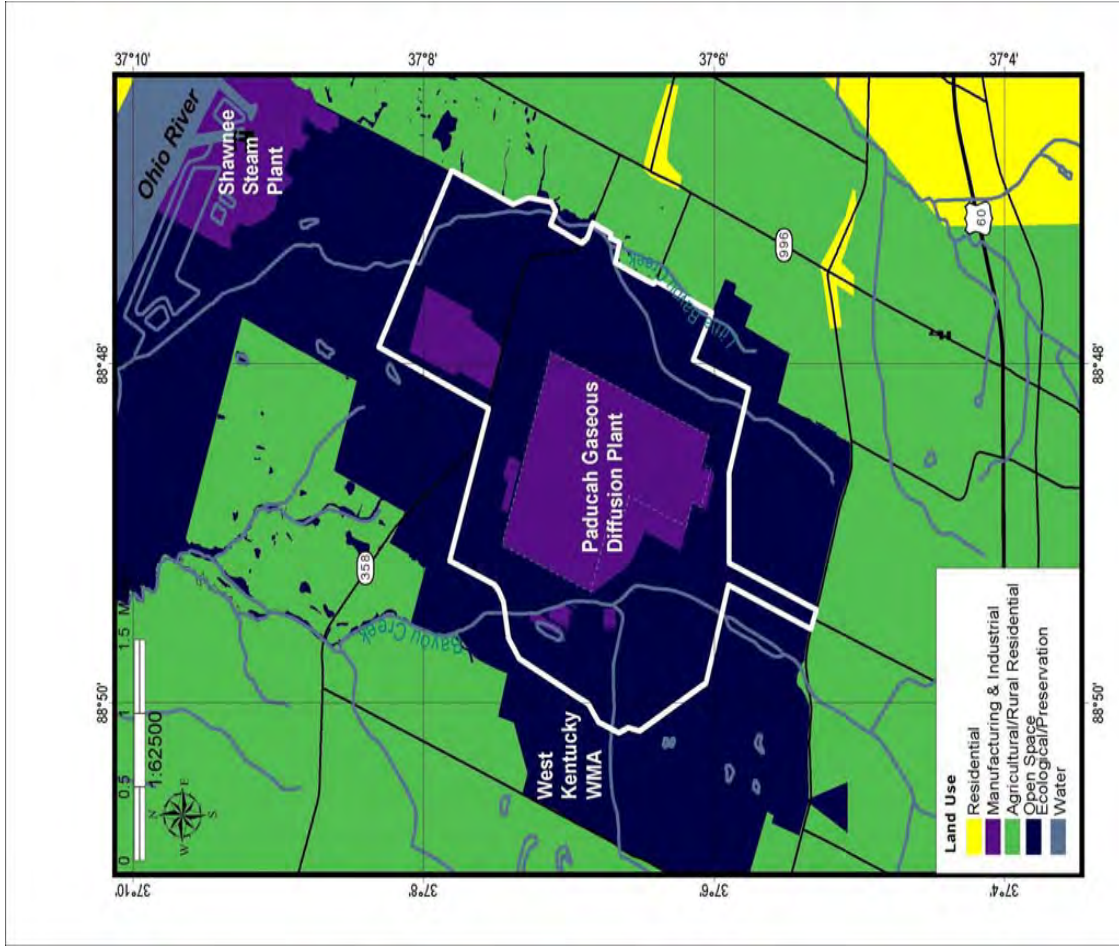
Within the funds provided, the Department shall undertake a study of the potential purchase of property or options to purchase property that is located above the plume of contaminated groundwater near the facility site. The study shall evaluate the adequate protection of human health and the environment from exposure to contaminated groundwater and consider whether such purchase, when taking into account the cost of remediation, long-term surveillance, and maintenance, is in the best interest of taxpayers.



Current and Reasonably Foreseeable Future Land Use

Summary

- Under the end state alternative, future use same as current use.
- Continued manufacturing and industrial use inside fence.
- Wildlife management and recreational use of other DOE-owned property.
- Agricultural and rural residential use of surrounding area.



Attachment 19

**CAB PRESENTATION FOR
2007 END STATE VISION STATUS
DECEMBER 13, 2007**

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Status of the End State Vision Document

- Final revisions in response to internal comments are on-going
- Revised document scheduled for delivery to EIC in February 2008
- Revisions to this document did not impact vision that future use will remain the same as current use
 - Continued manufacturing and industrial use inside fence
 - Wildlife management and recreational use of other DOE-owned property
 - Agricultural and rural residential use of surrounding area

A19-3



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure



Document Changes

- Modified title to be consistent with Portsmouth document
- Updated risk information and data associated with the SWOU and GWOU, including:
 - Completion of Scrap Metal Removal
 - SW Plume SI
 - Surface Water SI
- Added information about soil and rubble areas
- More details on project scopes and schedules
- C-404 Burial Ground (SWMU4) moved from Hazard Area 3 (BGOU – Group 1) to Hazard Area 1 (GWOU) to be consistent with the GWOU strategy

