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AUTHOR(S) (NAME AND AFFILIATION) BJC

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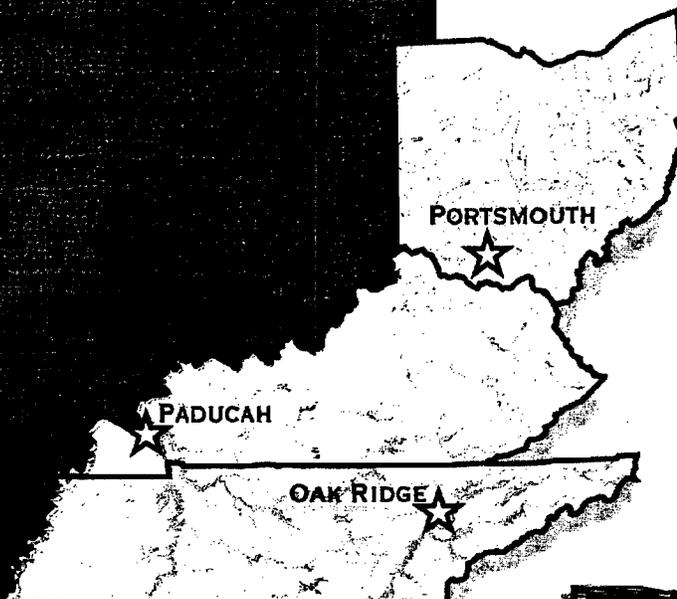
BJC/OR-573

**ENVIRONMENTAL MANAGEMENT  
& ENRICHMENT FACILITIES  
MANAGEMENT AND INTEGRATION CONTRACT**

**Planning Study for Return of a  
Gaseous Diffusion Plant from the  
United States Enrichment  
Corporation to the United States  
Department of Energy  
Oak Ridge, Tennessee**

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MANAGED BY  
BECHTEL JACOBS COMPANY LLC  
FOR THE UNITED STATES  
DEPARTMENT OF ENERGY

APPROVED FOR RELEASE  
H. H. Thomas



DOE Contract No. DE-AC05-98OR22700  
Job No. 23900  
July 6, 2000

United States Department of Energy  
Oak Ridge Operations Office  
Post Office Box 2001  
Oak Ridge, Tennessee 37831

Attn: Mr. George W. Benedict, Assistant Manager for Uranium Programs  
Mr. Robert J. Brown, Assistant Manager for Assets Utilization  
Mr. Rodney R. Nelson, Assistant Manager for Environmental Management

Subject: BJC/OR-573, Planning Study for Return of a Gaseous Diffusion Plant from the United States Enrichment Corporation to the United States Department of Energy

Dear Sirs:

Bechtel Jacobs Company LLC has completed the *Planning Study for Return of a Gaseous Diffusion Plant from the United States Enrichment Corporation to the United States Department of Energy*. Five copies of the report are enclosed for your use and distribution.

Under the U.S. Department of Energy (DOE)/United States Enrichment Corporation (USEC) lease, USEC may return a gaseous diffusion plant to DOE. During the period following notification, USEC must terminate facility operations, remove USEC-generated wastes, provide up-to-date drawings and characterizations of facilities, ensure that structures are placed in a safe and secure condition, and provide evidence of regulatory compliance to DOE. The facility can then return to DOE.

On June 21, 2000, USEC announced their intention to shutdown the Portsmouth Gaseous Diffusion Plant and return it to DOE in June 2002. Since the GDP Turnover Planning Study was complete, we elected not to revise the study [REDACTED]'s announcement. The report content remains valid.

The GDP turnover planning study describes DOE activities that should be undertaken during the period following [REDACTED] notification and at turnover. The study assumes a 2-year turnover period, although USEC may pursue other options under the lease. The study recommends taking the affected plant directly to D&D using the displaced workforce from the operating plant to perform D&D tasks. Assumptions for completing an updated D&D cost estimate and schedule are included in the GDP turnover planning study.

If you have questions or need additional copies of the report, please contact Jimmy Massey at 865-241-1250 or email [REDACTED]@bechteljacobs.org.

Sincerely,

A handwritten signature in black ink that reads "James W. Thiesing".

James W. Thiesing  
Vice President and General Manager

Enclosure – As stated

JWT/JCM:ljs  
GM-00-0038

c: File-EMEF-DMC-RC

**Planning Study for Return of a  
Gaseous Diffusion Plant from the  
United States Enrichment  
Corporation to the United States  
Department of Energy  
Oak Ridge, Tennessee**

Date Issued—July 2000

Prepared for the  
U.S. Department of Energy  
Office of Environmental Management

**BECHTEL JACOBS COMPANY LLC**  
managing the  
Environmental Management Activities at the  
East Tennessee Technology Park  
Oak Ridge Y-12 Plant Oak Ridge National Laboratory  
Paducah Gaseous Diffusion Plant Portsmouth Gaseous Diffusion Plant  
under contract DE-AC05-98OR22700  
for the  
**U.S. DEPARTMENT OF ENERGY**

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## ACRONYMS AND ABBREVIATIONS

BY	budget year
CRO	Community Reuse Organizations
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
DOELAP	DOE Laboratory Accreditation Program
EEl	Electrical Energy, Inc.
EM	Environmental Management
ES&H	environment, safety, and health
ETTP	East Tennessee Technology Park
FFCA	Federal Facilities Compliance Agreement
FY	fiscal year
GCEP	Gas Centrifuge Enrichment Plant
GDP	Gaseous Diffusion Plant
HEU	highly enriched uranium
HVAC	heating, ventilating, and air conditioning
IRIF	involuntary reduction in force
LCB	lifecycle baseline
M&I	management and integration
NDA	nondestructive assay
NRC	Nuclear Regulatory Commission
OEPA	Office of Environmental Policy Analysis
ORGDP	Oak Ridge Gaseous Diffusion Plant
OSHA	Occupational Safety and Health Administration
OVEC	Ohio Valley Electric Corporation
PGDP	Paducah Gaseous Diffusion Plant
PORTS	Portsmouth Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act
RCW	recirculating cooling water
RFP	Request for Proposal
RHW	recirculating heating water
SAR	Safety Analysis Report
S&M	surveillance and maintenance
SSP	subcontracting strategic plan
TSR	Technical Safety Requirements
UF <sub>6</sub>	uranium hexafluoride
USEC	United States Enrichment Corporation
USQD	unreviewed safety question determinations
VRIF	Voluntary Reduction in Force

## EXECUTIVE SUMMARY

### Overview

The Portsmouth and Paducah Gaseous Diffusion Plants (GDPs) are owned by the U. S. Department of Energy (DOE), and the enrichment production facilities are leased to the United States Enrichment Corporation (USEC). The terms and conditions of this arrangement are contained in the "Lease Agreement between the United States Department of Energy and the United States Enrichment Corporation," dated July 1, 1993. The lease agreement affirms USEC's right to operate and maintain the two GDPs to produce enriched uranium and affords USEC the right to shut down and return a plant to DOE under certain conditions. If USEC decides that it is no longer desirable from a business standpoint to operate both plants, it may return a plant to DOE with 2 years' notice. During that 2-year period, it is USEC's obligation to shut down and deactivate the plant and return it to DOE in an acceptable condition meeting certain turnover requirements that are described in the lease.

USEC may return portions of a plant, but not an entire plant to DOE with a 60-day notice, but the turnover requirements must be met, and DOE must agree to the return. It is recommended that DOE insist on the 2-year notification if a significant portion of a plant is to be returned.

USEC is a party to several other agreements concerning plant operations, but none of these agreements change the 2-year notification period or the turnover requirements. As of the date of this GDP turnover planning study, there are no agreements or obligations in place to prevent USEC from giving the 2-year notification at any time and proceeding with plant shutdown and turnover.

Section C-6 (b) (8) of the management and integration (M&I) contract between DOE and Bechtel Jacobs Company LLC states that Bechtel Jacobs Company will "provide planning support to DOE for the potential return of a gaseous diffusion plant from USEC." This GDP Turnover Planning Study has been conducted under that section of the M&I Contract.

### Conclusions and Recommendations

The 2-year notification period and the activities described for that period in the lease are appropriate for an acceptable turnover of a plant to DOE. However, early actions are required by DOE to be prepared to respond effectively to a USEC termination notification. The turnover requirements described in the lease are appropriate and sufficient and should result in a safe, compliant, and manageable plant on the turnover date. Any effort to reduce the 2-year period between notification and turnover and any effort to circumvent any of the turnover requirements should in our opinion be strongly resisted by DOE. The lease is a valid document and should be strictly enforced.

To reduce total project costs to DOE and to make optimum use of trained workers displaced from terminated GDP operations, DOE should take the affected plant directly into decontamination and decommissioning (D&D) rather than long-term surveillance and maintenance (S&M). It is recognized that S&M will be required while D&D is under way, but long-term S&M should be avoided. To ensure a smooth transition of the shut-down plant into D&D, it is recommended that the Uranium Programs (UP) and the Environmental Management (EM) Program be integrated into one program dedicated to the cleanup and the D&D of the returned plant.

The current M&I organizations at Portsmouth (PORTS) and Paducah (PGDP) will require minimal change after turnover. The plant facilities subproject and the D&D subproject should be added to the present project-based organization, and assuming optimum use of subcontracting under the M&I, approximately ten additional M&I "core" employees will be required.

Because USEC is under no obligation to continue running both plants and could make the 2-year notification at any time, we recommend that DOE take the following early actions now:

#### **Heat and Winterization Planning**

- Engineering studies should be initiated as soon as possible to define the equipment and facilities necessary to provide heat to plant buildings now heated by gaseous diffusion process waste heat. The studies should also define process building winterization requirements. It will be very difficult to accomplish the necessary heat and winterization tasks before the first winter following removal of process inventory if preliminary work is not completed before the 2-year notification is received.

#### **Clarification of Regulatory Authority**

- Both GDPs are now in compliance with the Nuclear Regulatory Commission (NRC) and Occupational Safety and Health Administration (OSHA) requirements. DOE should evaluate the option that the shut-down plant remain under NRC and OSHA. If the shut-down plant must be returned to DOE regulation as well as DOE management, funds will be required to bring the plant back into compliance with DOE orders and regulations. For example, USEC radiation dosimetry is certified under the National Voluntary Laboratory Accreditation Program, not the DOE Laboratory Accreditation Program. DOE should meet with NRC and OSHA regulators and decide on the postturnover regulatory framework.

#### **Establishment of Joint Turnover Group**

- A joint DOE/USEC working group should be appointed now to plan turnover actions required to implement a 2-year notification from USEC. This group should complete the deactivation and shutdown plan required by the lease. Power needs for the 2-year transition period and the postturnover period should be determined so that negotiations with the power supplier can begin no later than the notification date.

#### **Addition of GDP Turnover to EM Baseline**

- Changes to the DOE annual baseline and lifecycle baseline (LCB) for the period before notification, the 2-year period from notification and turnover, and postturnover should be determined so they can be implemented as soon as possible. The prenotification changes should be identified in the FY 2000 baseline, and Baseline Change Proposals (BCPs) should be processed for those changes that will be the responsibility of DOE to fund. Prenotification needs are \$800,000–\$700,000 for the engineering studies for heat and winterization requirements, and \$100,000 for regulatory negotiations, power studies, and preparation of expected baseline changes for the periods following notification. The estimated additional costs for the year following notification are approximately \$26 million if PORTS is chosen for return and \$19 million if PGDP is chosen. For the second year after notification, estimated costs are \$18 million for PORTS and \$15 million for PGDP for a total for the 2-year period of \$44 million for PORTS and \$34 million for PGDP. The \$10 million difference in estimates between the two plants is due to the fact that many more buildings on the PORTS site are heated with waste process heat.

### Update GDP D&D Cost Estimates

- The PORTS and PGDP D&D cost estimates and schedules should be updated assuming initiation of D&D as soon as facilities are available at the affected plant. The update should also assume maximum use of displaced USEC workers. D&D funding needs will be included in the D&D report and are not included in the GDP Turnover Planning Study. The GDP D&D cost estimate will be based on parametric models derived from experience at EITP. The models reflect the actual experience from subcontractor credits for reuse and recycling of contaminated and uncontaminated salvaged materials and equipment. Recycling and reuse will be business decisions of the successful bidders on the various components of D&D at the shut-down GDP.

During the 2-year period between notification and turnover, the following actions are required by DOE:

- Monitor USEC activities during deactivation and shutdown and perform a due-diligence validation to ensure that the returned plant meets the turnover requirements by the turnover date.
- Negotiate, with USEC's assistance, power contract changes for the period between notification and turnover and for the postturnover period.
- Negotiate environmental permit and regulatory agreement modifications required for DOE's postturnover operations.
- Revise the Safety Analysis Report and Technical Safety Requirements for the affected plant to reflect shutdown and deactivation status at turnover.
- Prepare a workforce transition plan to transition displaced USEC workers to DOE-related work with the M&I contractor or subcontractors.
- Prepare a postturnover management plan for postturnover DOE-managed operations.
- Implement LCB changes and request appropriations.
- Conduct communications sessions with workers and community stakeholders throughout the deactivation and shutdown process, initiation of D&D, and postturnover operations.

### Define Reindustrialization and Reuse Strategy

- A building list should be developed for PORTS and PGDP that defines a reuse/lease category and a D&D category, and a master land use and land leaseability plan should be developed for both sites. In addition, an Environmental assessment for leasing buildings and land at both sites should be developed and issued.

The proposed turnover schedule is shown in Fig. E.S.1, and details of the proposed schedule are contained in Appendix G.

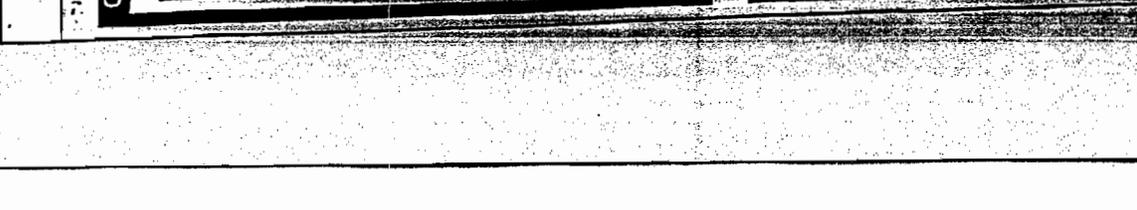
On the turnover date, DOE will be responsible for site management and operations. DOE costs at the shut-down site are expected to increase by approximately \$40 million the first year following turnover, but they should decline as D&D progresses.

The postturnover management plan will be implemented, and workforce transition for those workers needed for M&I contract and subcontract positions will be finalized. The postturnover M&I organization will be implemented with four subprojects: Environmental Restoration, Waste Management, Plant Facilities, and D&D.

Successful completion of prenotification tasks and successful completion of required tasks between notification and turnover should result in a safe, compliant plant returned to DOE. The tasks required on the actual turnover date should be minor.

2000 2001 2002  
 M A M J J A S O N D J J A S O N D J J A S O N D J J A S O N D J J A S O N D

Activity Description
<b>GDP Turnover</b>
<b>Prenotification Activities</b>
DOE Activities
DOE decision on D&D strategy
+ Scope Definitions/Assumptions
+ Analysis of Requirements & Options
+ Prep plan for Plant changes after shutdown
+ Plan for Deactivation & /Shutdown Validation
+ Permit Mods & Regulatory Agreements
+ Determine Regulatory Framework
+ Determine LCB Impact
+ Prep D&D Plan and Cost Estimate
<b>USEC Activities</b>
Submit official notification to DOE
<b>GDP Turnover</b>
<b>Prenotification Activities</b>
DOE Activities
DOE decision on D&D strategy
+ Scope Definitions/Assumptions
+ Analysis of Requirements & Options
+ Prep plan for Plant changes after shutdown
+ Plan for Deactivation & /Shutdown Validation
+ Permit Mods & Regulatory Agreements
+ Determine Regulatory Framework



**GDPT**

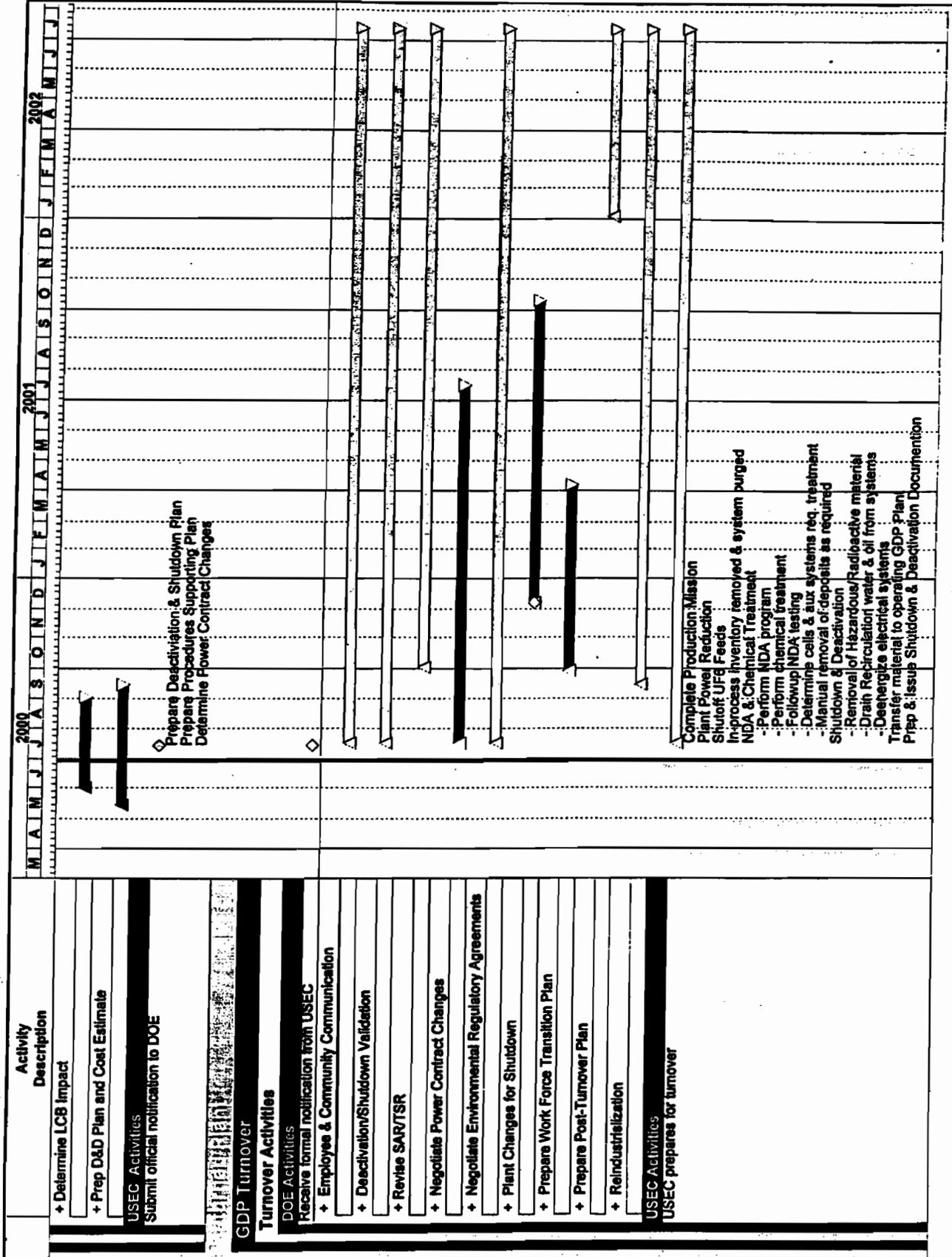
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 Finish Date: 12JUL02  
 Data Date: 29JUN00  
 Run Date: 29JUN00 16:15

Legend:  
 ▬ Early Bar  
 ▨ Progress Bar  
 ▭ Critical Activity

Fig. E.S.1.  
 Bechtel Jacobs Company LLC  
 GDP Turnover  
 Summary Schedule

Sheet 1 of 2

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2000  
M A M J J A S O N D J F M A M J J A S O N D J F M A M J J J

2001  
M A M J J A S O N D J F M A M J J A S O N D J F M A M J J J

2002  
M A M J J A S O N D J F M A M J J J

Activity Description

- + Determine LCB Impact
- + Prep D&D Plan and Cost Estimate

USEC Activities  
Submit official notification to DOE

**GDP Turnover**

**Turnover Activities**

- DOE Activities  
Receive formal notification from USEC
- + Employee & Community Communication
- + Deactivation/Shutdown Validation
- + Revise SAR/TSR
- + Negotiate Power Contract Changes
- + Negotiate Environmental Regulatory Agreements
- + Plant Changes for Shutdown
- + Prepare Work Force Transition Plan
- + Prepare Post-Turnover Plan
- + Reindustrialization

USEC Activities  
USEC prepares for turnover

- Complete Production Mission
- Plant Power Reduction
- Shutdown JFG Feeds
- In-process inventory removed & system purged
- NDA & Chemical Treatment
  - Perform NDA program
  - Followup NDA testing
- Determine cells & aux systems req. treatment
- Manual removal of deposits as required
- Shutdown & Deactivation
- Removal of Hazardous/Radioactive material
- Drain Recirculation water & oil from systems
- Deenergize electrical systems
- Transfer material to operating GDP Plant
- Prep & issue Shutdown & Deactivation Documentation

# 1. INTRODUCTION

This chapter addresses the following:

- the history of USEC and the DOE/USEC relationship;
- the assumptions used in the GDP Turnover Planning Study; and
- highlights of each of the subsequent chapters.

## 1.1 Background

As legislated in the Energy Policy Act of 1992, the United States Enrichment Corporation (USEC) was formed on July 1, 1993. USEC was formed as a government corporation to restructure and operate the U.S. government's uranium enrichment business and prepare it for privatization. The U.S. Department of Energy (DOE) owns the U.S. uranium enrichment plants. To accomplish its mission, USEC leased the two operating U.S. gaseous diffusion plants (GDPs) from DOE. The plants are located in Piketon, Ohio, and Paducah, Kentucky. The relationship between USEC and DOE is defined in the "Lease Agreement between the United States Department of Energy and the United States Enrichment Corporation," dated July 1, 1993.

In addition to operating the two GDPs, USEC was named the Executive Agent for the U.S.-Russian Highly Enriched Uranium (HEU) agreement. Under this agreement, Russian HEU from dismantled warheads is removed, downblended to commercial reactor-grade low enriched uranium, and shipped to USEC, where it is used to fill utility customer orders. USEC supplies electric utility customers around the world with enriched uranium from the two GDPs and from the U.S.-Russian agreement.

At the two operating GDPs, DOE has retained responsibility for environmental restoration, legacy (pre-1993) waste management, and surveillance and maintenance (S&M) of GDP facilities that are not needed for the ongoing production of enriched uranium.

USEC became a private corporation as a result of legislation passed on April 26, 1996. The lease between USEC and DOE remains in effect.

The lease between USEC and DOE provides USEC with an option of returning one or both plants to DOE when they are no longer needed. This action, called "turnover" requires a 2-year notification to DOE, and certain "turnover requirements" must be met. These turnover requirements include, but are not limited to, USEC's responsibility to shut down the plant(s), remove wastes, and document the deactivation and shutdown. Appendix A contains the complete list of turnover requirements from the lease.

## 1.2 Purpose

The purpose of this scoping plan is to document the necessary actions in the event that USEC should notify DOE that one or both plants are being returned to DOE. It should be emphasized that USEC has not indicated that such a notification is likely, but DOE should have a plan in place because the plants have a limited lifespan.

This plan discusses and recommends actions that DOE and its Management and Integration (M&I) contractor should take before notification, the actions necessary during the 2-year period between notification and turnover, and the organization and baseline necessary for postturnover project management.

Bechtel Jacobs Company LLC conducted this GDP Turnover Planning Study.

### 1.3 Bases for Planning Study

For the purpose of this study, the following assumptions were used:

- One GDP will be returned to DOE under Sect. 12.1, "Termination for Convenience" of the lease. Enrichment Operations will continue at the other GDP. An alternate scenario is the return of a portion of a plant, but not the entire plant, under Sect. 3.4(b) of the lease.
- The GDP Turnover Planning Study is not site-specific, and site differences will be considered in developing specific facility turnover plans.
- Lease terms will be fully complied with; 2 years' notice will be given to DOE, and USEC will meet the "turnover requirements" in Sect. 4.4 of the lease.
- USEC will continue to be regulated by the Nuclear Regulatory Commission (NRC) and the Occupational Safety and Health Administration (OSHA) until the turnover date; on that date, DOE will become responsible for the entire site under either DOE regulation or outside regulation.
- During the 2-year period preceding turnover, DOE will not impose or self-perform any work intended to exceed or redefine the turnover requirements as described in Sect. 4.4 of the lease. It will be necessary for DOE to perform certain tasks during the 2-year period to prepare the plant for postturnover operations. This work includes, but is not limited to, providing heat to facilities now heated with waste process heat. Because such work may be in leased space or on leased systems, agreement among DOE, USEC, and NRC will be necessary.
- Plant systems needed for ongoing DOE operations and facilities that are now heated with waste process heat will be winterized and reconfigured as necessary to compensate for the loss of process heat. This work must be accomplished before the first winter following the loss of process heat.
- Both the Ohio Valley Electric Corporation (OVEC) and Electrical Energy, Inc. (EEI), require notifications of 3-5 years to terminate or reduce the power contracts. If DOE gets only the 2-year notification required by the lease, negotiations with the power suppliers for the 2-year period before turnover and postturnover must be conducted as soon as possible after USEC informs DOE of the intention to return a GDP.
- The returned plant will be taken into the EM decontamination and decommissioning (D&D) program at turnover to reduce long-term surveillance and maintenance costs, to maximize the use of trained and qualified workers, and to minimize severance costs. Displaced workers who operated and maintained the operating plant for USEC will be trained and moved directly to D&D tasks. Some of these D&D tasks may begin before turnover.

- USEC employees required for postturnover work will transition to the M&I contractor or directly to selected subcontractors on or before the turnover date.
- A subcontracting strategy will be implemented during the 2-year period from notification to turnover to ensure that all subcontracts are in place and that workforce transition takes place on the turnover date.
- The D&D plan, cost estimate, and D&D contracting strategy will be based on East Tennessee Technology Park (ETTP) experience to date. Major process building D&D will be accomplished through competitively awarded fixed-price contracts. An active reindustrialization program will be successful in that several Gas Centrifuge Enrichment Plant (GCEP) and GDP facilities will be subleased through the Southern Ohio Diversification Initiative and the Paducah Area Community Reuse Organization.

#### 1.4 Summary

The GDP Turnover Planning Study addresses the requirements that must be met by USEC and DOE for USEC to turn a GDP back to DOE for ultimate D&D. The planning study discusses the actions that must be taken by each party. In addition, it breaks those actions down into those that should be taken before notification, those that must be accomplished during the 2-year period leading to turnover, and postturnover actions. The study presents options and makes recommendations that are designed to result in the lowest lifecycle cost and shortest schedule to complete plant D&D.

Chapter 2, which defines and analyzes turnover requirements, contains analyses of the following: the Energy Policy Act of 1992; the USEC/DOE lease of July 1, 1993; the USEC privatization legislation of April 26, 1996; and the USEC/Treasury agreement of July 14, 1998. These documents are analyzed to determine whether the basic notification and turnover requirements as outlined in the lease are modified in any way. The conclusion is that the turnover requirements as outlined in Sect. 4.4 of the lease and the lease-required 2-year notification to DOE remain valid for the privatized USEC. The GDP Turnover Planning Study recommendations for DOE are based on receiving the 2-year notification from USEC and receiving a plant returned from USEC on the turnover date.

Chapter 3 contains a discussion of USEC's option under the lease to return a portion of a plant instead of an entire GDP. The lease permits USEC to return a facility or facilities to DOE with a 60-day notice, but the turnover requirements in Sect. 4.4 must be met. Although USEC has the right to return a portion of a plant, that option is thought to be unlikely. The GDP Turnover Planning Study is based on the return of an entire GDP.

USEC activities that should be taken before notification are discussed in Chap. 4. This planning study presents options and recommendations to DOE, but it's important to keep in mind that USEC, a private corporation, is under no obligation to accept our recommendations. These activities are presented as suggestions and to confirm that they are USEC's responsibilities. The deactivation and shutdown of an operating GDP is a complicated series of evolutions, and USEC's deactivation and shutdown plan will be regulated by NRC. This planning study recommends that the deactivation and shutdown plan and the detailed step-by-step procedures be developed before the 2-year notification is given. Meeting the turnover requirements on the turnover date will be aided by beginning the period following notification with an approved plan and procedures for deactivation and shutdown.

Chapter 5 contains discussions of DOE activities that should be accomplished before notification. Because several buildings at both Paducah (PGDP) and Portsmouth (PORTS) use waste heat of compression from the gaseous diffusion process to maintain building temperatures in cold weather, significant plant changes must be made for these buildings to be habitable after the process power level is dropped below minimum values. Nine buildings at PGDP and 27 buildings at PORTS are heated with water that is heated with waste heat of compression from GDP. The PORTS buildings include all of the DOE-occupied buildings in the GCEP area. Scope statements and cost estimates should be developed to permit issuance of Request-for-Proposals (RFPs) shortly after notification. These RFPs will be for design-build subcontracts to supply heat to the facilities now heated by waste process heat.

RFPs to winterize process buildings should also be ready to issue shortly after notification. Achieving the goal of issuing the RFPs requires developing subcontract requirements and cost estimates well before notification.

The current M&I organizations at the two GDPs require little, if any, changes after a GDP is returned to DOE. Work execution will be subcontracted, and a small increase in M&I "core" staff will be sufficient to manage the work.

Chapter 5 also contains a section on the preparation of a D&D plan and cost estimate. This plan is based on going directly into D&D following turnover and making the maximum use of displaced workers from the operating GDP to perform D&D tasks. The D&D plan will include cleaning out and reindustrializing the GCEP buildings at PORTS; cleaning and reindustrializing good condition, uncontaminated buildings at both plants; and demolishing contaminated buildings and disposing of the debris in on-site disposal cells. The D&D plan and cost estimate will be a follow-up to the GDP Turnover Planning Study and will be completed by September 30, 2000. Recommended assumptions for the D&D report are listed in Chap. 5.

Chapter 6 contains discussions of USEC activities during the 2-year period from notification until turnover. USEC will complete its production mission and reduce the power level to minimum levels. They will use nondestructive assay techniques to determine the location of uranium deposits exceeding always-safe mass, as well as chemically treat or physically remove deposits until no deposits above always-safe mass exist. Chemical treatment of equipment will not be required unless a deposit of concern is located.

USEC will then shut down the plant according to its deactivation and shutdown plan and, following DOE's due diligence validation of the shutdown and plant conditions as specified by the turnover requirements, it will turn the plant over to DOE.

DOE's activities during the 2-year period from notification until turnover are discussed in Chap. 7. DOE will conduct community stakeholder meetings and worker meetings to ensure that plans and conditions are communicated to interested parties. In an observer status, DOE will monitor USEC activities during the shutdown process and conduct a validation of the deactivation and shutdown before turnover.

Needed power contract changes must be negotiated as soon as possible after notification because lower power levels will occur well before turnover. DOE holds the power contracts at both plants and must negotiate the changes, but it is in USEC's interest for these negotiations to be timely and successful because, according to Exhibit E of the lease, USEC may be responsible for excess demand charges resulting from the shutdown decision. Required environmental permit changes must be negotiated during

the 2-year period so that the changes can take place on the turnover date. Current authorization basis documents must be revised to describe postturnover operations and be approved by the turnover date.

The RFPs for subcontracts to implement needed plant changes will be issued, contracts will be awarded, and the work will be completed.

The subcontracting strategy to subcontract work execution for the returned GDP after turnover will be implemented, and subcontracts will be conditionally awarded 90 days before turnover. The subcontract notices-to-proceed will be issued as close as necessary to the turnover date, and workforce transition to these subcontracts will occur on the turnover date. Consistent with the workforce transition plan and applicable labor agreements, displaced USEC workers will transition either (1) to subcontractor(s) selected for postturnover tasks for the returned GDP; (2) to D&D subcontractor(s) and receive training for D&D; or (3) to the M&I "core" to support the increased scope of work. Individuals who do not transition to one of these placement alternatives are expected to receive a Voluntary Reduction in Force (VRIF) or Involuntary Reduction in Force (IRIF).

Chapter 8 discusses what happens on and following turnover. This activity includes beginning D&D and S&M of returned facilities under the M&I concept. It also includes implementing the postturnover nuclear regulatory structure.

## **2. DEFINITION AND ANALYSIS OF TURNOVER REQUIREMENTS**

This chapter addresses the following:

- the general turnover requirements as stated in the DOE/USEC lease;
- the specific lease sections that address turnover; and
- the lease turnover conditions for specific plant systems.

### **2.1 Background**

Three documents were reviewed and analyzed as to their impact on the basic notification and turnover requirements contained in the lease agreement between DOE and USEC. The documents reviewed were as follows:

1. The Energy Policy Act of 1992 (Public Law No. 102-486, 106 Stat. 2776), herein called the "Energy Policy Act";
2. The USEC Privatization Act, as enacted in the Omnibus Consolidated Rescissions and Appropriations Act of 1996 (Public Law No. 104-134, 110 Stat. 1321 and 1321-335), herein called the "Privatization Act"; and
3. The Treasury/USEC Agreement of July 14, 1998.

Sections excerpted from the above documents pertaining to the DOE/USEC lease agreement are contained in Appendix B. These excerpts were reviewed against the applicable sections in Article IV, "Leased Premises and Leased Personalty," as listed below:

1. Sect. 4.3, "Return of Leased Premises and Leased Personalty";
2. Sect. 4.4, "Turnover Requirements";
3. Sect. 4.5, "Permissible Changes"; and
4. Sect. 4.6, "Decontamination and Decommissioning."

Neither the Energy Policy Act nor the Privatization Act allows for deviation from the termination requirements as stated in the lease agreement. The Privatization Act specifically states that the lease of the diffusion plants and related property for the remainder of the term of the lease is in accordance with the lease agreement. As such, the requirement of a 2-year notification to DOE for turnover and the turnover requirements remain valid for the privatized USEC.

The Treasury/USEC Agreement issued in July 1998 does not modify any of the obligations, including turnover requirements, for the privatized USEC with respect to the lease agreement between DOE and USEC. The exact wording of the obligations contained in this agreement is provided in Appendix B.

In conclusion, the privatized USEC must adhere to the requirements and conditions contained in the lease agreement. Therefore, the 2-year notification requirement and the turnover requirements contained in the lease remain valid and must be met by USEC.

## 2.2 Turnover Requirement Analysis

The lease agreement was also reviewed to identify the sections applicable to lease termination. These sections were then analyzed to determine the Bechtel Jacobs Company interpretation of the identified sections relative to facility condition at time of turnover. The interpretation defines the accountable party (DOE or USEC) in addition to interpreting the lease sections.

Table 1 presents the applicable text excerpted from the lease agreement and the Bechtel Jacobs Company interpretation of the text. The information contained in Table 1 is an updated version of information presented in EFS-95-002.<sup>1</sup>

Table 2 presents detailed interpretation of the effect of meeting the turnover requirements on selected GDP facilities, systems, and equipment. Table 2 is also an updated version of information presented in EFS-95-002.

Based on a review of the turnover requirements in the lease and our understanding of those requirements, a returned GDP meeting the requirements should be safe, compliant, and ready for D&D.

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<sup>1</sup> *GDP Turnover Contingency Planning Baseline Facility Turnover Conditions*, EFS-95-002, Martin Marietta Energy Systems, Inc., June 1995.

Table 2.1 Lease Understanding

Lease reference	Bechtel Jacobs Company's understanding of lease language
<p>Article IV, Sect. 4.2: Physical Condition of Leased Premises and Leased Personalty</p>	
<p>(a) . . . physical condition of the Leased Premises and . . . Leased Personalty . . . is as . . . found on July 1, 1993 . . .</p>	<p>USEC accepts premises and process equipment "as is" July 1, 1993.</p>
<p>(b) . . . Corporation acknowledges that the Leased Premises and the Leased Personalty are in good and serviceable condition for use by the corporation to produce enriched uranium.</p>	<p>USEC acknowledges that, when received, premises and process equipment were usable for the intended purpose.</p>
<p>(c) . . . The Corporation will, at its expense, throughout the Lease Term, maintain the Leased Premises in good and serviceable condition . . .</p>	<p>USEC will maintain facilities and systems in good and usable condition.</p>
<p>(c) . . . This obligation of the Corporation shall not affect the Corporation's right to return the Leased Premises and the Leased Personalty to the Department in the condition in which such Leased Premises and Leased Personalty are found on the day they are returned to the Department pursuant to other provisions of this Lease.</p>	<p>USEC returns premises and personalty "as is" when terminating the lease.</p>
<p>Sect. 4.3: Return of Leased Premises and Leased Personalty</p>	
<p>(a) . . . At the end of the Lease Term, the Corporation will return the Leased Premises and Leased Personalty to the Department in the condition in which the Leased Premises and Leased Personalty are found on that date. The Corporation will have no obligation to place the Leased Premises and Leased Personalty in any better condition. Prior to returning the Leased Premises and Leased Personalty to the department, the corporation will comply with the Turnover Requirements.</p>	<p>USEC will not be required to improve leased premises and personalty before returning to DOE, but it will fulfill turnover requirements.</p>
<p>(b) . . . The Corporation shall be entitled, should it choose, to leave any of its personal property (including personal property contaminated by radioactive materials) on the Leased Premises at the end of the Lease Term for decontamination and decommissioning by the Department.</p>	<p>USEC may choose to remove or leave behind any personal property when the lease is terminated, including radioactively contaminated personal property.</p>

**Section 4.4: Turnover Requirements**

... end of the Lease Term or at any time the Corporation exercises its option in Section 3.4(b) ... or terminates this Lease. Corporation shall, prior to returning to the Department any facility ... , take the following actions ... "Turnover Requirements"

(a) ... Provide the Department with documentation of its plans to place such facility into an acceptable condition for return to the Department consistent with the requirements described in subsections (b) through (f) of this Section.

(b) ... Terminate facility operations. Complete and document the final deactivation/shutdown of the facility and document that no future use of the facility is planned.

USEC will document its turnover plans and provide them to DOE. Bechtel Jacobs Company recommends that USEC provide these plans to DOE when USEC gives notification of its intent to terminate the lease and further recommends that DOE insist on approval rights.

USEC will cease GDP operations by removing the UF<sub>6</sub> inventory and shutting down the process and auxiliary systems.

Deactivation is defined in DOE Order 430.1A, "Life Cycle Asset Management." The definition is as follows: "The process of placing a facility in a safe and stable condition including the removal of readily removable hazardous and radioactive materials to ensure adequate protection of the worker, public health and safety, and the environment, thereby limiting the long-term cost of surveillance and maintenance. Actions include the removal of fuel, draining and/or de-energizing nonessential systems, removal of stored radioactive and hazardous materials, and related actions. Deactivation does not include all decontamination necessary for the dismantlement and demolition phase of decommissioning, e.g., removal of contamination remaining in the fixed structures and equipment after deactivation."

Remove solid deposits of UO<sub>2</sub>F<sub>2</sub>/UF<sub>4</sub> to the extent necessary to prevent criticality, using an in-place removal process, such as the chemical fluorination treatment; and ensure that nothing adversely affects the operability of the purge cascade, the coolant, drainage, storage systems, HV/AC systems and air filtration systems.

USEC will ensure that no single piece of equipment contains greater than an always safe mass, defined as 43% of minimum critical mass.

Since the plant must be shut down and USEC must document that no future use of the facility is planned, the reason for the lease language concerning the purge cascade and coolant systems is not understood. It is expected that the purge cascade would be shut down under the same conditions as the rest of the plant, ensuring that no deposits greater than always safe mass exist. Coolant could either be transferred to the operating plant or left behind. Drainage systems; storage systems; heating, ventilating, and air-conditioning (HVAC) systems; and air filtration systems will be needed after turnover so that when they are turned over, they will be over capable of normal operations.

(c) ... Remove all waste generated by the Corporation in such facility (including any material that is subject to classification as a hazardous waste under the Solid Waste

USEC will remove and dispose of USEC-generated waste.

Lease reference

Bechtel Jacobs Company's understanding of lease language

Disposal Act, as amended) and which is subject to and authorized by Laws and Regulations for offsite disposal. The Corporation will remain responsible for the ultimate treatment and disposal of any waste generated by the Corporation, . . .

(d) . . . For structures at the facility, provide the Department with the Corporation's available radiological/hazardous materials records, available documentation of the configuration of the facility and related systems, available drawings, specifications, procedures, manuals, and available unplanned occurrences records applicable to the facility . . . soil, surface water, . . . groundwater conditions . . . available data and reports that describe those conditions and the nature and extent of contamination therein.

(e) . . . Place structures to be returned at the facility in a safe secure condition, removing any immediate threats to human health and safety. Existing radiation monitoring systems shall be in a physical condition adequate to monitor the potential release of any radioactive contamination.

(e) The most current radiation contamination/ hazardous and toxic material survey done by the Corporation for the facility and surrounding areas shall be provided to the Department.

(f) . . . Provide to the Department . . . status report of the facility's compliance with environmental, health, and safety regulatory requirements. If the facility is in noncompliance, a strategy for achieving compliance will be developed by the Corporation and provided to the Department.

Sect. 4.5: Permissible Changes

(a) . . . demolish or destroy . . . Corporation will be solely responsible for and will pay all the costs related to thereto except that the Department shall be solely responsible for and will pay the cost of transporting, storing and disposing of all the material resulting from such demolition or destruction . . . Department will attempt in good faith to store and dispose of all such material at locations other than on the Leased Premises . . .

(b) . . . Capital Improvement . . . less than \$250,000, . . . not be required to secure the Department's approval . . . If the making of the proposed Capital Improvement is Environmentally Sensitive . . . the Department shall be solely responsible for and will pay the cost of transporting, storing and disposing of any material resulting from such Capital Improvements . . .

USEC will provide DOE with available contamination and environmental condition data; NRC Event Reports; open Problem Reports; and physical facility and system data, including available as-built drawings, specifications, etc.

Structures were safe when leased to USEC; USEC will return structures to DOE in a safe condition. BJC recommends the definition of "safe" as being in compliance with applicable OSHA regulations as they relate to structures.

Radiation monitoring systems, which include criticality alarm systems, UF<sub>6</sub> release detection systems, and space recorders will be will be operating at the time of turnover.

USEC will provide available radiological, hazardous material, and toxic materials survey data to DOE.

USEC will provide to DOE documentation of Environment, Safety, and Health (ES&H) compliance and corrective action status, including actions required to achieve compliance with applicable regulations.

With DOE's consent, USEC may demolish leased facilities at USEC cost, except that DOE will be responsible for the costs of the disposal of demolition rubble.

USEC can make capital improvements without DOE's consent if less than \$250,000. DOE will be responsible for the costs of the disposal of residual construction materials.

**Lease reference**

**Bechtel Jacobs Company's understanding of lease language**

(c) . . . The Corporation shall become the owner of and shall take title to each and every Capital Improvement . . . Corporation will have the right to remove any Capital Improvement, . . . if such removal increases the costs of the Department for the Decontamination and Decommissioning of the Leased Premises . . . the Corporation will pay any such increase in Decontamination and Decommissioning costs.

USEC will own capital improvements but will be responsible for any incremental D&D costs due to removal of such improvements.

**Sect. 4.6: Decontamination and Decommissioning**

(a) Except as provided in Section 4.5 (c) of this Lease, the Department will be responsible for and will pay the costs of all Decontamination and Decommissioning, including the costs of Decontamination and Decommissioning of the Leased Premises, the Leased Personally, any personal property found on the Leased Premises, regardless of ownership, and any Capital Improvement. . . .

DOE is responsible for D&D of returned leased facilities and personal property left on-site after lease termination.

**Sect. 9.3: Total Destruction of Leased Premises**

In the event the Leased Premises . . . are damaged as a result of any foreseen or unforeseen cause or event . . . the Corporation will have the option, upon thirty (30) days notice to the Department, to terminate this Lease with respect to such GDP without the need to take any further action under this Lease or otherwise . . . return the Leased Premises and Leased Personally with respect to that GDP to the Department in the condition in which such Leased Premises and Leased Personally are found on that date . . . Corporation will have no obligation to place such Leased Premises and Leased Personally in any better condition . . . Corporation will have an obligation to comply with the Turnover Requirements, but only with respect to facilities which are not destroyed . . .

The scenarios described in this section of the lease are highly unlikely and therefore beyond the scope of this document, which deals with the normal, 2-year turnover cycle. However, this lease provision is mentioned to alert DOE that there is a situation in which USEC could return a GDP to DOE with 30 days' notice.

**Sect. 12.1: Termination for Convenience**

. . . The Corporation shall have right to terminate this lease . . . upon two years notice to the Department, . . . the Corporation will comply with the Turnover Requirements . . .

USEC is required to give DOE 2 years' advance notice of lease termination and has 2 years to comply with the turnover requirements.

Table 2.2 Baseline Turnover Conditions for GDP Facilities, Systems, and Equipment

System description	Operating condition	Other conditions
<b>System 1: Cascade cell/stage process equipment</b>		
A. Converters (including barrier and gas coolers)	Shut down	• UF <sub>6</sub> inventory removed, and all systems purged to a UF <sub>6</sub> negative according to current, approved procedures.
B. Compressors (including shaft seals)	Shut down	• No uranium deposits greater than always safe mass remain in any single piece of equipment.
C. Interstage piping and control valves	Shut down	• Residual uranium deposit levels verified and documented.
D. Intercell piping (including block valves)	Shut down	• UF <sub>6</sub> systems intact and filled with dry air to atmospheric pressure.
<b>System 2: Primary cascade auxiliary systems</b>		
A. UF <sub>6</sub> feed system (including steam supply)	Shut down	• All UF <sub>6</sub> systems purged to UF <sub>6</sub> negative according to current, approved procedures.
B. Product withdrawal system	Shut down	• No uranium deposits greater than always safe mass remain in any single piece of equipment.
C. Tails withdrawal system	Shut down	• All UF <sub>6</sub> systems intact and filled with dry air to atmospheric pressure.
D. Purge cascade	Shut down	• USEC-generated trap media removed from shut-down trap systems disposed of as waste under the lease.
E. Chemical and cold trap systems	Shut down	• Cascade air systems, wet air pumps, and seal systems capable of operating to maintain proper cell pressures.
F. Booster stations and tie lines	Shut down	
G. Freezer/sublimator system	Shut down	
H. Storage (surge) drums	Shut down	
I. Treatment system	Shut down	
J. Instrumentation system	Shut down	
K. Lube oil system	Shut down	
L. Cascade air system	Operating	
M. Cascade nitrogen system	Shut down	
N. Purge and evacuation stations	Shut down	
O. Wet air pump stations	Capable of Operating	
P. Seal feed and exhaust systems	Capable of Operating	
Q. Fluorine generation system	Shut down	

System description	Operating condition	Other conditions
<b>System 3: Cascade power system</b>		
A. Stage motors	Shut down	<ul style="list-style-type: none"> <li>• Current 1-line diagrams available.</li> </ul>
B. Building transformers, circuit breakers, etc.	Shut down	
C. Control panels	Shut down	
D. Building wiring	Operating	
E. On-site transmission lines	Operating	
F. Switch yards (transformers, circuit breakers, condensers)	Capable of Operating	
G. Emergency diesel generators	Operating	
H. Battery rooms	Operating	
<b>System 4: Process cooling system</b>		
A. R-114 piping	Shut down	<ul style="list-style-type: none"> <li>• Oxygen deficiency detection system in place and operating.</li> <li>• Recirculating cooling water drained from condensers.</li> </ul>
B. Condensers	Shut down	
C. RCW piping	Shut down	
D. RCW pumps and pump houses	Shut down	
E. RCW cooling towers	Shut down	
F. RCW treatment facilities	Shut down	
G. R-114 transfer and associated equipment	Capable of operating	
<b>System 5: Process buildings and service systems</b>		
A. Structure, per se	Safe and Secure	
B. Ladders and elevators	Capable of intended use	
C. Shops	Shut down	
D. Control rooms	Shut down	
E. Electrical (lighting, etc.)	Operating	
F. Sanitary water	Operating	
G. Sewage	Operating	
G. Cranes	Capable of intended use	
I. Ventilation system	Operating	
J. Fire protection	Operating	
K. Interior storm drains	Capable of intended use	

**Other conditions**

**Operating condition**

**System description**

**System 6: Other process-related facilities**

- A. Decontamination and uranium recovery
- B. UF<sub>6</sub> sampling and transfer facilities
- C. UF<sub>6</sub> cylinder washing facility

Capable of intended use  
Shut down  
Capable of intended use

**System 7: Site utilities**

- A. Electrical, exterior lighting
- B. Sanitary (potable) water
- C. Sewage plant
- D. Stormwater
- E. Telephone
- F. Radio and other communication systems
- G. Computing and networks
- H. Steam
- I. Nitrogen (nonscald)
- J. Compressed air (nonscald)
- K. Chilled water (PGDP)

Operating  
Operating  
Operating  
Operating  
Operating  
Operating  
Operating  
Operating  
Shut down  
Operating  
Operating  
Operating

**System 8: Roads, railroads, and grounds**

Operating

**System 9: Maintenance facilities**

- A. Central shops (machine, weld, carpenter, etc.)
- B. Field shops
- C. Cascade equipment repair shops
- D. Vehicle maintenance
- E. Laundry

Operating  
Shut down  
Shut down  
Operating  
Operating

**System 10: Fire protection systems**

- A. Fire water system (tanks, piping, sprinklers, Hydrants, etc.)
- B. Extinguishers
- C. Fire hall
- D. Fire trucks

Operating  
Operating  
Operating  
Operating

System description	Operating condition	Other conditions
<p>System 11: Plant protection systems</p> <p>A. Emergency operations center</p> <p>B. Central control facility</p> <p>C. Fences, portals, badge reader systems</p> <p>D. Guard headquarters</p> <p>E. Plant public address system</p> <p>F. Emergency vehicles</p> <p>G. Medical facility</p> <p>H. Criticality alarms</p> <p>I. Monitoring systems (environmental, meteorological)</p>	<p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p>	
<p>System 12: Laboratory facilities</p> <p>A. Analytical chemistry</p> <p>B. Research and development</p>	<p>Capable of intended use</p> <p>Shut down</p>	
<p>System 13: Office and related service facilities</p> <p>A. Office buildings</p> <p>B. Training facilities</p> <p>C. Food service facilities</p> <p>D. Records handling and storage</p> <p>E. Warehouses</p> <p>F. Stores facilities</p> <p>G. Change houses</p>	<p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p> <p>Operating</p>	
<p>System 14: Waste management and tails storage facilities</p> <p>A. Waste treatment, storage, and disposal facilities</p> <p>B. UF<sub>6</sub> tails cylinder storage yards</p>	<p>Operating</p> <p>Operating</p>	<ul style="list-style-type: none"> <li>• All cylinders of USEC-generated depleted uranium removed from leased cylinder yards.</li> <li>• All USEC-generated waste removed.</li> <li>• The DOE cylinder management program should be contracted under a separate prime contract under DOE before turnover.</li> </ul>

### **3. ANALYSIS OF TURNOVER OPTIONS AVAILABLE TO USEC UNDER THE LEASE**

This chapter addresses the following:

- the option to return a portion of a plant;
- the option to return a plant under total destruction of leased premises; and
- the option of termination for convenience and return of an entire plant.

USEC has the right to turn a plant or a portion of a plant back to DOE under three separate sections of the lease, as shown below.

#### **3.1 Option to Expand or Reduce Leasehold (Not Return of an Entire Plant)**

Section 3.4, "Option to Expand or Reduce Leasehold," subsection (b), states that USEC has the right to delete from the lease and return to DOE any of the facilities listed in Exhibit A or any of the land identified as leased premises on the maps in Exhibit A. Such right shall not include the right of USEC to terminate the lease in its entirety or to terminate the lease with respect to one of the GDPs, which right shall be permitted only in accordance with Sect. 9.3 and Sect. 12.1 of the lease. The lease further states in Sect. 3.5 (a) that if USEC decides to return any facilities under 3.4 (b) above, USEC will provide 60 days' notice to DOE. DOE shall review the request and upon DOE's consent, which shall not be unreasonably withheld, Exhibit A will be amended to reflect the change.

Section 3.5 (b) states that any item of property returned under Sect. 3.4 (b) will be returned to DOE in the condition in which such property is found on the date returned. Section 3.5 (b) further states that before returning any of the leased premises to DOE, USEC will comply with the turnover requirements.

Because Exhibit A is a list of leased premises, including facilities and structures, Sect. 3.4 (b) gives USEC the right to return a facility or facilities with a 60-day notice as long as the entire plant is not returned. DOE must agree to take the facility or facilities back, and USEC must comply with the turnover requirements. This section is interpreted to mean that a shutdown and deactivation plan would have to be provided to DOE, uranium deposits greater than always safe mass would be removed, USEC-generated waste would be removed, and the remainder of the turnover requirements would have to be met.

USEC has in the past returned facilities under Sect. 3.4 and 3.5 of the lease. In those instances, the 60-day notice and the turnover requirements have been met. However, experience with deleasing a facility has shown that the entire process, from official notification to completing the turnover requirements to amending Exhibit A, takes longer than 60 days. To date, DOE has not declined USEC's return of a facility.

#### **3.2 Total Destruction of Leased Premises**

Section 9.3, "Total Destruction of Leased Premises," states that if the leased premises are totally destroyed by any cause or event, and that in the business judgement of USEC, the damage makes the leased premises completely unusable, USEC has the option upon 30 days' notice to DOE to terminate the

lease with respect to the damaged plant without the need to take any further action. If USEC decides to return a plant under this section of the lease, turnover requirements must be met only for the facilities that are not destroyed.

This section of the lease protects USEC against major expenditures resulting from acts of God, fires, or similar events. The decision to return a plant or a portion of a plant under Sect. 9.3 is USEC's and is based on USEC's business judgment.

### 3.3 Termination for Convenience

Article XII, Sect. 12.1, "Termination for Convenience," states that USEC has the right to terminate the lease with respect to one plant or both plants, at USEC's convenience, at any time during the lease term, upon 2 years' notice to DOE, without the need to take further action under the lease, if, in USEC's business judgement, such termination is economically necessary. USEC will have no obligation to place the leased property in any better condition, but USEC must meet the turnover requirements.

This section of the lease allows USEC to return a plant based on economics. If one plant's production and the Russian low enriched uranium from HEU shipments can meet USEC's product shipments, and running only one plant is economically desirable, USEC can return a plant "for convenience." It has been assumed that this is the most likely scenario under which USEC would return a plant to DOE.

The three turnover options are summarized below:

Table 3.1 Three Turnover Options

Lease section	Notification requirements	DOE Concurrence	Comments
3.4(b)	60 days	Yes	USEC may return any facilities in Exhibit A, but not an entire GDP.
9.3	30 days	No	USEC may return a destroyed plant. USEC has some financial obligations after turnover.
12.1	2 years	No	USEC may return a plant for economic reasons.

If USEC were to determine that it is in USEC's economic interest to return a GDP to DOE, Sect. 12.1 applies, and USEC is required to give DOE a 2-year notice of such return. This GDP Turnover Planning report is based on that scenario. Even with the 2-year notice, there are certain actions that DOE should take before notification to ensure that DOE's requirements are met during the 2-year period between notification and turnover, as well as after turnover.

The 2-year notice in the lease is a well-reasoned time period that allows USEC and DOE to prepare the affected plant for turnover and D&D and to obtain the necessary funding through the congressional budget process. If USEC proposes turning back a plant with less than a 2-year notice, it is recommended that DOE deny that request based on the lease language.

The return of a plant under Sect. 9.3 is considered highly unlikely and would require actions by DOE that are outside the scope of this report.

Section 3.4(b) allows for the return of any facilities listed in Exhibit A, but forbids terminating the lease in its entirety or terminating the lease with respect to one of the GDPs. It clearly states that an entire plant can only be returned under Sects. 9.3 or 12.1. USEC could interpret Sect. 3.4(b) as allowing the

return of most plant facilities with only a 60-day notice to DOE. For instance, if USEC decides to shut down PORTS, USEC might need to continue operating the X-344 Product Transfer and Shipping Facility at PORTS because PGDP does not have sufficient cylinder transfer and shipping facilities to handle all of the customer receipts and shipments. In that case, USEC could try to return the rest of PORTS under Sect. 3.4(b) with 60 days' notice. Because USEC must get DOE's consent to return facilities under Sect. 3.4(b), DOE should not agree to return under those circumstances. DOE should insist on return under Sect. 12.1 if the majority of plant facilities are to be returned.

## 4. USEC ACTIVITIES BEFORE NOTIFICATION

This chapter addresses the following:

- the shutdown and deactivation plan required by the lease; and
- power contract changes.

### 4.1 Background

If USEC decides to return a GDP to DOE, the DOE/USEC lease requires a 2-year notification by USEC, and the lease further requires that certain turnover requirements must be met by USEC. The lease does not require any actions by USEC before notification. Because USEC is a private company regulated by NRC and OSHA, DOE and its contractors understand that USEC is under no obligation to accept recommendations. However, in the course of completing the GDP Turnover Planning Study, certain issues have surfaced that are presented for USEC's consideration.

### 4.2 Shutdown and Deactivation Plan

The first of the turnover requirements in Sect. 4.4 of the lease states that USEC will provide DOE with documentation of its plans to place such facility into an acceptable condition for return to DOE consistent with the requirements described in subsequent subsections of the lease. According to the turnover requirements, the plan should cover the following:

- termination of facility operations, including documentation of the final deactivation and shutdown of the facility and documentation that no future use of the facility is planned;
- removal of solid uranium deposits to the extent necessary to prevent criticality and documentation that no deposits above always safe mass exist in the facility;
- documentation that the purge cascade, the coolant systems, drainage systems, storage systems, HVAC systems, and air filtration systems remain in good condition;
- documentation of the plan to remove all waste generated by USEC;
- documentation of the plan to provide DOE with available radiological and hazardous materials records, available documentation of the configuration of the facility and related systems, available drawings, specifications, procedures, manuals, and available unplanned event records applicable to the facility;
- documentation of the plan to provide DOE with soil, surface water, and groundwater conditions at the facility;
- documentation of the plan to ensure that structures are in a safe, secure condition and that existing radiation monitoring systems are operable;
- documentation of the plan to provide current radiation contamination, hazardous, and toxic material survey done by USEC for the facility and surrounding areas; and
- documentation of the plan to provide a status report of the facility's compliance with environmental, health, and safety regulatory requirements.

The termination of facility operations portion of the plan should include how USEC expects to complete the production mission at the plant that is to be shut down. Also, a detailed timeline for process inventory removal and process equipment purging and shutdown should be included. Detailed shutdown

and deactivation procedures should be written and approved. Reconciliation of USEC's power rampdown with DOE's need to provide alternate heat supplies to those facilities now heated by waste process heat should be included in the facility deactivation and shutdown plan.

Because the plan to place the facility into an acceptable condition meeting the turnover requirements is rather extensive, and since detailed procedures for shutdown and deactivation will have to be developed, it is recommended that USEC undertake this task before notification. Although DOE participation and approval of the plan is not specified in the lease, it is recommended that DOE participate in the writing and approval of the plan to ensure that the facility is shut down and deactivated to meet the turnover requirements. DOE should also make the documentation of the 1985 Oak Ridge Gaseous Diffusion Plant (ORGDP) shutdown available to USEC to aid in the preparation of the shutdown and deactivation plan and associated procedures. A joint effort between DOE and USEC should help both organizations.

Writing the deactivation and shutdown plan and developing applicable procedures before notification will ensure that shutdown and deactivation is performed in a compliant and timely manner.

#### **4.3 Power Contract Changes**

Power contract changes should also be addressed by USEC before notification. Because the power contracts at the two operating plants require from 3 to 5 years' notice to terminate the contracts and similar lead times to reduce power demand, USEC should begin discussions with DOE on needed power contract changes as soon as it is known which plant is affected. Exhibit E of the DOE/USEC lease is the "Memorandum of Agreement between United States Department of Energy and United States Enrichment Corporation for Electric Power." Article III, No. 3, of Exhibit E appears to hold USEC responsible for any excess demand charges resulting from plant shutdown, and it is important that USEC and DOE agree on such issues. Starting negotiations with the power supplier as soon as possible will increase the chances for a successful resolution for the power supplier, DOE, and USEC.

## 5. DOE ACTIVITIES BEFORE NOTIFICATION

This chapter addresses the following:

- the activities required to provide heat to facilities now heated by waste heat from the operating GDPs;
- postturnover plant organization structure and subcontracting strategy;
- the recommended power contract negotiation strategy;
- the recommended regulatory oversight strategy during and after turnover;
- the recommended method to validate that required deactivation and shutdown conditions are met;
- the environmental permit and environmental regulatory agreement modification strategy;
- the effect of GDP turnover on the EM and UP lifecycle baselines; and
- assumptions for the preparation of the D&D plan and cost estimate.

### 5.1 Work to Provide Heat to Plant Facilities

#### 5.1.1 Background

The gaseous diffusion process uses extremely large amounts of power to enrich uranium. The nameplate capacities of both PGDP and PORTS are over 2000 megawatts. Gaseous diffusion is a very inefficient process in that more than 90% of the power consumed is rejected as the waste heat of compression. GDP facilities have long taken advantage of the large amount of waste heat by using that heat to maintain process building temperatures. The primary source of heat that is required to keep the  $UF_6$  gas in the gaseous state inside process buildings is the waste heat of compression. Supplemental steam heaters are installed in certain areas of GDP process buildings to provide heat when portions of the process are off-line.

As improvements and additions were made to the GDP facilities, the use of waste heat to provide nonprocess building space heating was expanded. Systems were designed and built to pump heated recirculating cooling water (RCW) from the GDP process buildings to buildings requiring space heating. The pumped water is known as recirculating heating water (RHW). In some instances, buildings that were originally heated with steam were converted to RHW to save money on steam generation costs, and newly constructed buildings were heated with RHW because it was the least expensive alternative.

Currently there are nine buildings at PGDP and twenty-seven buildings at PORTS heated with RHW. The relatively large number of buildings at PORTS using RHW is due to the fact that the GCEP facilities, which were constructed from 1979 to 1985, use the RHW system to supply heat. Tables 5.1 and 5.2 list the buildings at PGDP and PORTS, respectively, that are heated by the RHW system. The GCEP facilities at PORTS house the DOE and contractor Environmental Management and Enrichment Facilities project.

There are six process buildings at PGDP and three at PORTS that depend on waste heat for the primary heat source.

### 5.1.2 Effect of Plant Shutdown on Heat Requirements

Shutdown of the gaseous diffusion process at either PGDP or PORTS will result in loss of the waste heat source, RCW and RHW, and the internal radiant heat from the process within each building. Steps must be taken to provide alternate sources of heat or to winterize the buildings once the source of waste heat is lost.

The lease between DOE and USEC requires USEC to give a 2-year notification before turning a plant back to DOE. The lease appears to offer no protection against UF<sub>6</sub> inventory removal early in the 2-year period; in fact, such early removal would be expected because power costs are a significant portion of the costs saved by shutting down a plant. As soon as inventory removal is completed, waste heat of compression is no longer available.

Lack of heat to buildings during cold weather months at the facility to be turned back to DOE is DOE's most critical vulnerability. In addition, this is the one issue that has been identified that will likely take more time to resolve than is available between notification and the onset of cold weather. As a result, it is strongly recommended to DOE that an M&I subcontract be placed as soon as possible to complete

**Table 5.1 Buildings Heated by the RHW System at PGDP**

Building	Gross area (ft <sup>2</sup> )	Heat source <sup>a</sup>
C-100 Administration	67,516	C-335
C-101 Cafeteria	18,326	C-335
C-102 Medical	11,666	C-335
C-200 Guard/fire departments	19,490	C-335
C-400 Decontamination facility	116,140	C-335
C-710 Laboratory	84,333	C-335
C-720 Maintenance shops	338,905	C-335
C-750 Garage	11,866	C-335
C-360 UF <sub>6</sub> sampling and transfer	20,240	C-337
<b>Total square footage</b>	<b>688,482</b>	

<sup>a</sup>Refers to the process building in which RHW is heated.

**Table 5.2 Buildings Heated by the RHW System at PORTS**

Building	Gross area (ft <sup>2</sup> )	Heat source <sup>a</sup>
X-112 Computer center	30,000	X-330
X-343 Feed vaporization	14,721	X-333
X-533 Power switch house	148,756	X-333
X-623 Groundwater pump and treatment facility	5,000	X-330
X-630 Pump house	10,200	X-330
X-633 Pump house	11,300	X-333
X-700 Converter shop/chemical cleaning	128,852	X-330
X-705 Decontamination and recovery	100,476	X-330
X-720 Maintenance and stores	312,035	X-330
X-751 Mobile repair garage	16,360	X-330
X-1000 Administration building	73,700	X-330
X-1007 Fire station	12,800	X-330

**Table 5.2 Buildings Heated by the RHW System at PORTS (cont.)**

X-1020 Emergency Operations Center	7,180	X-330
X-3000 Central control building (GCEP)	12,447	X-330
X-3001 Process building (GCEP)	303,680	X-330
X-3002 Process building (GCEP)	303,680	X-330
X-3012 Process support building	56,243	X-330
X-3346 Feed and withdrawal	167,236	X-330
X-5000 Power switch house	7,512	X-330
X-6000 Pump house/air plant	15,768	X-330
X-6644 Fire water control building	4,000	X-330
X-7721 Maintenance and training	28,925	X-330
X-7725 Recycle and assembly (waste management)	837,900	X-330
X-7726 Centrifuge training and test	49,480	X-330
X-7727 Transfer corridor	24,246	X-330
XT-801 Office building	44,286	X-330
XT-847 Warehouse	150,000	X-330
<b>Total square footage</b>	<b>2,876,783</b>	

\*Refers to the process building in which the RHW is heated.

engineering studies and design a system or systems to provide necessary heat to GDP facilities to be turned back. Cost estimates for system installation should be completed, and detailed scope descriptions of work should be incorporated into on-the-shelf RFPs, which can be issued almost immediately following notification. By using this approach, buildings should be habitable and compliant throughout the period following notification as well as after turnover.

### 5.1.3 Planning Assumptions

There are two planning assumptions.

- Buildings now served by the RHW heating system will require alternate heat sources after waste heat is lost. The only exceptions are the X-630 and X-633 pump houses at PORTS, which can be shut down. Several of the former GCEP buildings at PORTS are that site's most likely candidates for reuse and reindustrialization and should be heated after turnover.
- Fire protection systems in the process buildings will remain active, thus requiring either a system to maintain building heat above freezing or conversion to dry-type sprinkler systems. Each of the process buildings contains steam heaters to prevent "cold spots" during normal operations. One option is to use these heaters together with running a few ventilation fans and sealing process building intake and exhaust louvers to prevent the freezing of sprinkler systems. This method has been successfully used in portions of the X-326 Building, most of which was shut down when production of HEU was suspended.

### 5.1.4 Recommendations

The following recommendations are submitted to ensure that minimum heat is provided to the facilities returned to DOE at turnover of a GDP:

1. An RFP should be developed and issued under the M&I Contract for engineering and preliminary design work to replace the RHW heating system in the facilities now heated by RHW (except X-630 and X-633). There should be a separate design and cost estimate for PGDP and PORTS. This work

should be started immediately because DOE may have no advance warning for a turnover notification, and the time between notification, loss of waste heat, and cold weather will not likely allow engineering, design, and installation before the onset of cold weather.

2. An RFP should be developed and issued under the M&I contract for engineering and preliminary design work to winterize the process buildings. There should be a separate design and cost estimate for PGDP and PORTS. The adequacy of the existing steam systems in the process buildings to provide sufficient heat should be evaluated. Fire protection alternatives should be evaluated in this scope of work.
3. The results from the two subcontracts above for the plant chosen to be turned back to DOE should be incorporated into an RFP for a subcontract to design and construct the systems to supply heat to the facilities now heated by waste process heat and to winterize the process buildings. This RFP should be finalized in a form to permit issuance shortly after notification is received from USEC.

Preliminary information that will provide a starting point for developing the detailed scope and descriptions of work for the RFPs is contained in Appendix C. This information was developed during a previous turnover study that was published as EFS-95-007<sup>2</sup>.

## **5.2 M&I Organization at PORTS and PGDP**

The current Bechtel Jacobs Company M&I organizations at PORTS and PGDP are shown in Fig. 1. These organizations, each of which includes approximately 50 Bechtel Jacobs Company badged "core" employees, are structured as project organizations with various subprojects aligned with work defined in the annual baseline. The subprojects include environmental restoration, waste management, and uranium programs (formerly called Enrichment Facilities). The remaining Bechtel Jacobs Company employees at the sites reside in functional organizations that provide support to the subprojects as needed and also provide oversight to the subprojects and support to the sites.

Work execution in the subprojects and to a certain extent in the functional organizations is outsourced to subcontractors who specialize in environmental remediation, waste management, health and safety support, quality assurance support, and other subproject and support-related work. The Bechtel Jacobs Company staff is responsible for managing the site and integrating the subcontractors to ensure that the work described in the annual baseline is accomplished on time, within budget, and in compliance with environmental and nuclear regulations.

The total annual budget at each site is approximately \$90 million (FY 2001).

### **5.2.1 M&I Organization after GDP Turnover**

Minimal change will be necessary in the site M&I organization after a GDP is shut down and returned to DOE. The returned "previously leased GDP facilities" will fit well into the existing subproject and project support M&I organization. The recommended assimilation of previously leased GDP facilities into the M&I organization is shown in Fig. 2. The turnover of the previously leased GDP facilities will result in work that will be combined with the uranium programs subproject to form the plant facilities subproject. The plant facilities subproject will include all GDP facilities (nonleased and previously leased) that are not required in the ongoing environmental remediation and waste management missions at

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<sup>2</sup> *GDP Turnover Contingency Planning Facility Turnover Plan*, EFS-95-007, Lockheed Martin Energy Systems, Inc., March 29, 1996.

the sites. At PORTS, the GCEP facilities will also be included in the plant facilities subproject. The D&D subproject is also recommended to be added to the M&I structure.

The subprojects at the shut-down site will be as follows:

- environmental restoration,
- waste management,
- plant facilities, and
- D&D.

The plant facilities subproject will be fully subcontracted on the day of turnover. Former USEC employees who operated and maintained the running GDP will transition to the M&I on the day of turnover, and most of them will transition to subcontractors who are hired to oversee and maintain the shut-down site.

Ramp up of D&D activities as the plant is shut down and turned back to DOE is recommended. Former USEC employees who ran the operating plant but who are not needed for the ongoing plant facilities subproject can transition directly to the D&D subcontractor(s).

In summary, there is no need for significant organization changes at the site where the GDP is shut down by USEC and returned to DOE. The additional DOE work can be assimilated into the existing site M&I organization in the form of a project. An increase of about ten core M&I employees can be expected, but the bulk of the returned GDP facilities work and the D&D work can and should be subcontracted.

### **5.2.2 Outline of Subcontracting Strategy**

A Subcontracting Strategic Plan (SSP) for subcontracting the work related to the return of a leased GDP from USEC to DOE is required, and the strategy should be finalized in detail and implemented as soon as notification is received from USEC of its intention to shut down and return a plant to DOE. The subcontracting strategy will be implemented during the 2-year period from notification to turnover to ensure that subcontract notices-to-proceed and workforce transition occur no later than the date of turnover to DOE. The implementation of the subcontracting strategy will ensure the timely transition of former USEC employees to the plant facilities and D&D subprojects managed by the M&I contractor.

SSP focuses on actions that begin upon notification and continue for the duration of the 2-year period from notification until turnover. The actions include the following:

- Determine functions, staffing needs, and required subcontracts during the 2-year period from notification to turnover.
- Identify and prepare scopes of work related to the return of leased facilities.
- Determine whether additional work scopes should be handled through scope changes to existing M&I subcontracts or whether new subcontracts are required.

- Prepare a workforce transition plan, identify personnel issues, and prepare strategy and action plan to ensure timely workforce transition.

### **5.2.3 Subcontracting Approach**

- Detailed scope descriptions of work required during the 2-year period from notification to turnover will be finalized as needed, and RFPs will be issued to accomplish work required before turnover.
- Detailed scope descriptions of postturnover work will begin at notification and will be finalized 270 days before turnover. All work scopes will consider impacts to workforce transition.
- RFPs for postturnover work will be issued 180 days before turnover.
- Subcontracts will be conditionally awarded 90 days before turnover.
- Final award, including notices-to-proceed, will be in place at turnover, and workforce transition will occur on the turnover date.

### **5.2.4 Workforce Training and Qualification**

On the date of turnover, there must be a smooth and rapid transition to overseeing and maintaining returned GDP facilities and D&D. Worker training and transition must be managed and dovetailed with the subcontracting strategy such that workforce use is optimized and severance costs are minimized. An effective management plan for the mobilization of the needed workforce will be developed. The plan will include the following:

- Scheduling work to take full advantage of workforce availability.
- Continuous, subcontracted, just-in-time training of the current workforce as workers complete one project and move to another to qualify them for future work.
- Well-planned subcontracting schedules for the subcontractor workforce to ensure that the workforce is properly trained and qualified.

### **5.2.5 Mobilization Plan Goals**

- Training and retraining of the workforce is timed to mitigate the effects of personnel reductions.
- Training of the workforce enables the M&I contractor to meet work commitments during the 2-year period from notification to turnover.
- Training of displaced workers ensures a well-trained workforce after turnover to support the ongoing M&I mission.
- An adequate workforce is available after turnover to perform ongoing M&I work, postturnover work related to return of the leased GDP facilities, and D&D work.

### 5.3 Power Contract Changes

DOE currently holds power contracts with EEI for the supply of power to PGDP and with OVEC for the supply of power to PORTS. Power is procured under these contracts for USEC, which leases uranium enrichment facilities at PGDP and PORTS from DOE. USEC reimburses DOE for the cost of the power. However, because DOE holds the contracts, DOE is contractually liable under the provisions of the contract. The relationship between DOE and USEC concerning power, including USEC's obligations to reimburse DOE for power-related expenses, is described in the DOE/USEC Lease Agreement, specifically Exhibit E, "Memorandum of Agreement between United States Department of Energy and United States Enrichment Corporation for Electric Power."

Reports EFS-95-003, *GDP Turnover Contingency Planning Power Contract Termination Provisions and Consequences*<sup>2</sup>, and EFS-95-004, *GDP Turnover Contingency Planning Power Contracting Options*<sup>3</sup>, discuss termination provisions of each power contract, including rights and obligations, and examine strategies to minimize power contract-related costs to DOE in the event that USEC returns a GDP to DOE. This section suggests actions DOE should take to ensure that economical power is available post- shutdown to carry out the DOE mission at the site and minimize excess demand charges.

Termination notification provisions in both power contracts give large economic incentives for prompt notification to the power suppliers. The lease between DOE and USEC requires that USEC give DOE 2 years' notice before returning a GDP to DOE. The power contracts require a longer notice before termination (3 years in the case of OVEC, 5 years in the case of EEI). If USEC gives the minimum 2 years' notice to turn back a plant to DOE, and if the affected power supplier insists on strict interpretation of the power contract, significant excess demand charges may be incurred. Responsibility for excess demand charges is not specifically stated in the lease. However, based on Article III, No. 3, of Exhibit E of the lease, it is recommended that DOE take the position that USEC is responsible for all demand charges that result from termination of a power contract because USEC returns a GDP. This position has been supported by a legal review from the Bechtel Jacobs Company legal staff with the added recommendation that this position be documented to USEC as soon as possible. If USEC fully understands this position, it may be more likely to give DOE more than the 2 years' minimum notice to turn back a plant. Documenting this position is important not only from a legal point of view, but failure to have this issue resolved at the time of notification will seriously impact DOE's negotiating strength for economical post-shutdown power.

Negotiations for post-shutdown power should not begin until notification. Upon notification, it is recommended that DOE conduct a detailed audit of plant auxiliary loads to help determine the exact requirements. The current plant load at ETTP averages approximately 9 MW, which should be a good estimate for either PGDP or PORTS after turnover. Once the post-shutdown requirements have been determined, DOE should enter into negotiations with the current power supplier to supply the needed power and determine the most likely power cost. Simultaneously, DOE should begin negotiations with area utilities to determine the cost and availability of power. Therefore, it is important to understand area utility options as well as the cost from the present supplier.

Another possibility is that USEC might elect to return portions of one or both sites. Under this scenario, the existing power contracts would remain in place, and DOE could continue to obtain power under them. However, if power requirements decrease more than that allowed under the existing

<sup>2</sup> *GDP Turnover Contingency Planning Power Contract Termination Provisions and Consequences*, EFS-95-003, Martin Marietta Energy Systems, Inc., July 1995.

<sup>3</sup> *GDP Turnover Contingency Planning Power Contracting Options*, EFS-95-004, Martin Marietta Energy Systems, Inc., July 1995.

contracts, excess demand charges will be applied. Again, the issue of who is responsible for those excess demand charges becomes very important.

It is important to note that, power contract language notwithstanding, DOE and USEC have managed to negotiate relatively favorable agreements during times that USEC has chosen to operate the plants below contract demand levels. In most cases, DOE has been able to negotiate reduced demand charges. In 1999, at USEC's request, DOE and OVEC entered into an innovative agreement allowing DOE/USEC to reduce power during the summer months at PORTS and sell the power back to OVEC at rates approaching market rates instead of OVEC production rates. This agreement is documented in "Letter Supplement to Contract No. DE-AC05-76ORO1530," from George W. Benedict, Assistant Manager for Project and Technical Services, to Mr. E. Linn Draper, Jr., President of OVEC, dated March 31, 1999. This innovative agreement allowed USEC to generate revenue with the power sale. Such an agreement should be pursued for the period of the contract that remains after GDP turnover.

In summary, most of the actions that DOE will need to take to resolve cancellation or amendment to an existing power contract and cannot take place before notification. It is recommended that DOE proceed with documenting its position to USEC concerning responsibilities for paying excess demand charges that may result from shutdown and turnover. It is in all parties' best interest that DOE react promptly upon receiving notification from USEC.

#### **5.4 Strategy Negotiation for Regulatory Oversight after Turnover**

##### **5.4.1. Background**

Before the formation of USEC as a government corporation on July 1, 1993, DOE was the owner, operator, and regulator of the GDPs. OSHA assumed regulation of industrial safety on July 1, 1993, but DOE continued to regulate the GDPs in the area of nuclear safety under a regulatory oversight agreement with USEC. Under a Memorandum of Agreement entitled "Agreement Establishing Guidance for NRC Inspection Activities at the Paducah and Portsmouth Gaseous Diffusion Plants between Department of Energy Regulatory Oversight Manager and Nuclear Regulatory Commission," NRC established a site presence at the GDPs and performed assessments while DOE continued to regulate the plants. The NRC assessments were not official "inspections," but the results were made available to DOE. As the regulator, DOE could enforce findings from the NRC assessments as well as DOE's own inspections. In March 1997, after certifying the GDPs, NRC became the GDP nuclear safety regulator. The only exception was in the area of HEU. Because the NRC certificates of compliance for PGDP and PORTS limit the amount of HEU that can be possessed by USEC, DOE continues to regulate USEC in the area of nuclear safety in those leased, but not certified, portions of PORTS where quantities of HEU exceed the limits in the NRC certificate.

According to the lease between DOE and USEC, if USEC decides to return a GDP to DOE, USEC is required to provide DOE with documentation of its plans for deactivation and shutdown of the facility and placing the facility into an acceptable condition that meets the turnover requirements that are described in Sect. 4.4 of the lease. The deactivation, shutdown, and placing the facility into an acceptable condition meeting the turnover requirements will take place during the 2-year period between the time USEC notifies DOE of its intent to shut down a plant and the time the plant is turned back to DOE.

##### **5.4.2 Regulatory Environment during Deactivation and Shutdown**

USEC will continue to be regulated by OSHA and NRC during the 2-year period from notification to turnover. It is anticipated that the deactivation and shutdown plan that must be provided by USEC to

DOE will require NRC approval because the plan will describe actions to be taken in the running GDP cascade in leased space that is under NRC regulation. USEC will then deactivate and shut down the plant under NRC regulation. DOE's main concern is not with the actual deactivation and shutdown but with the turnover condition of the plant. If the plant fully complies with the turnover requirements when turned back to DOE, USEC has satisfied its obligations.

It will be necessary for DOE to perform some work in the leased space during deactivation and shutdown for the plant to be ready for turnover. This work includes, but is not limited to, actions and projects necessary to provide building heat to buildings now being heated with GDP process heat. DOE, NRC, and USEC must reach agreement on the regulatory issues raised by DOE performing work in leased, NRC-regulated, space. A modification to the DOE/USEC shared site agreement may be required to define responsibilities for this work.

It is recommended that DOE and NRC enter into an agreement similar to the Memorandum of Agreement cited in Sect. 5.4.1 that was in place after July 1, 1993, that would allow DOE to establish a site presence during the 2-year period between notification and turnover. DOE should be allowed to perform assessments and provide that information to NRC, much like NRC's assessments during the time DOE regulated USEC under the regulatory oversight agreement. DOE should reach an agreement with OSHA to allow DOE to establish a site industrial safety regulatory presence and to provide the results of walk-downs and assessments to OSHA.

#### 5.4.3 Regulatory Environment following Turnover

Because NRC regulates in leased space and DOE remains the regulator in nonleased space, it follows that DOE would resume regulatory responsibility in the newly nonleased area upon return of the plant or a portion of the plant to DOE. Likewise, upon turnover, because OSHA regulates the industrial safety of USEC employees, the employees who transition to DOE or DOE's contractor would revert to DOE oversight and regulation of industrial safety.

#### 5.4.4 Regulatory Options

If DOE desires external regulation of a DOE facility, the returned GDP is an attractive candidate for such a program. Significant DOE funds were expended to bring both GDPs into compliance with NRC regulations and OSHA requirements. Because the plants are now in compliance with NRC and OSHA requirements, maintaining these agencies as external regulators may be desired instead of returning to DOE regulation. If the plants were to return to DOE regulation, funds would have to be spent to bring the plants into compliance with DOE orders. One example of a program that would require funding to return to DOE regulation is radiation dosimetry. Funds were spent to bring plant dosimeters into compliance with the National Voluntary Laboratory Accreditation Program, the NRC standard. The plants are not in compliance with the DOE Laboratory Accreditation Program (DOELAP), the DOE standard, so if DOE is to be the regulator, funds must be spent to return plant dosimeters to DOELAP accreditation.

The NRC Certificate of Compliance could be modified for the shut-down plant using current plant change procedures during the period before turnover.

#### 5.4.5 Regulatory Negotiations

It is recommended that DOE decide on the preferred regulatory environment following turnover and meet with NRC and OSHA to establish agreements that will ensure a smooth regulatory transition. These discussions should be held before notification, if possible, but certainly no later than immediately following notification from USEC of the intent to return a plant.

## **5.5 Plan for Validation of Deactivation/Shutdown According to the Lease**

### **5.5.1 Background**

If USEC decides to return one of the GDPs to DOE, Sect. 4.4 (a) of the DOE/USEC lease requires USEC to “provide the Department with documentation of its plans to place such facility into an acceptable condition for return to the Department consistent with the requirements described in subsections (b) through (f) of this Section.” Subsections (b) through (f) define the turnover requirements that USEC must meet before the actual turnover of the plant. Because NRC regulates USEC, it is anticipated that NRC must approve the plan for deactivation and shutdown and that NRC will regulate USEC throughout the process of deactivation and shutdown. Although the lease does not specifically give DOE the right to approve the plan, DOE should insist on approval rights because this document defines the actions to be taken to comply with the turnover requirements. Furthermore, NRC will likely follow the precedent set by the “Memorandum of Understanding Between the Nuclear Regulatory Commission and the Department of Energy—Cooperation Regarding the Gaseous Diffusion Plants” related to the approval of compliance plan changes and request DOE approval of this plan before NRC’s final approval. NRC regulation during deactivation and shutdown will ensure safety during those evolutions, and DOE review and approval of the plan will ensure that the end point of the turnover process will return to DOE a facility that meets the turnover requirements.

In addition to review and approval of the plan, it is recommended that DOE formulate and implement a validation program that will be conducted on-site during deactivation and shutdown to ensure that turnover requirements are met. It is recommended that such a program for validation be patterned after the facility assessment program<sup>4</sup> that was conducted immediately after the Oak Ridge Environmental Management and Enrichment Facilities M&I contract change on April 1, 1998, focusing on nuclear safety, facility safety, environmental compliance, and health issues.

### **5.5.2 Purpose**

Assessments will be conducted on all facilities that are to be returned from USEC to DOE. The assessments will apply a standardized and consistent approach to ensure that the facilities that are returned from USEC fully meet the turnover requirements that are documented in the lease. DOE should not accept facilities until the turnover requirements are met.

### **5.5.3 Scope**

The scope of the project consists of the following activities:

- facility identification,
- facility assessment,
- facility assessment approval and report preparation, and
- facility acceptance.

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<sup>4</sup> *Assessment Report of the EMEF Oak Ridge Operations Facilities Managed by Bechtel Jacobs Company LLC, BJC/OR-67, Bechtel Jacobs Company LLC, October 1998.*

The focus of the facility assessments will be the turnover requirements and the USEC plan for deactivation and shutdown to meet those requirements. Emphasis will be placed on the following areas:

- nuclear safety requirements;
- removal of solid uranium-containing deposits to prevent criticality;
- removal of all waste generated by USEC;
- receipt of radiological and hazardous materials records, including noncompliances for facilities and structures at the plant;
- receipt of available documentation of facility configuration;
- receipt of available drawings, specifications, procedures, manuals, and applicable unplanned event records and environmental deficiencies;
- ensuring that the returned facilities are in a safe and secure condition; and
- receipt of a status report of the facility's compliance with ES&H regulatory requirements.

#### **5.5.4 Facility Identification**

A comprehensive list of facilities that are leased to USEC is contained in Exhibit A of the lease. These are the facilities that will be assessed during the validation program.

#### **5.5.5 Facility Assessments**

A detailed procedure defining the validation program, including checklists to support the due diligence review, will be developed. Checklists will be aligned to functional areas, such as safety authorization basis, nuclear criticality safety, radiation protection, environmental compliance, and operations. A technical lead will be assigned to each functional area to ensure accountability and consistency of the facility assessment. The legal department will provide guidance to the team leads and technical leads in completing the due diligence checklists. The team and technical leads will in turn be responsible for directing the team personnel in the appropriate use of the checklists.

A systematic approach will be developed to conduct the assessments of facilities to be returned to DOE. There will be three major efforts to complete the assessments of each facility:

- planning,
- field surveys, and
- close-out.

The planning phase of the assessment involves identifying and collecting documents and information concerning facility conditions and status of compliance with turnover requirements. Facility review packages containing facility descriptions, facility history, documents supporting permits or authorization basis, inventories of radioactive or hazardous materials, turnover requirements applicable to the facility, facility review checklists, and other information will be compiled before walk-downs are conducted. Each

team member will have read and become familiar with the contents of documents applicable to his or her expertise before the due diligence walk-down.

After gathering the preliminary information required to prepare for facility assessment, the team leads will contact the USEC facility manager. The facility manager will brief the team concerning the health and safety requirements for the facility and provide information pertinent to the checklists. The assessment team will then walk-down the facility and complete the applicable checklists. Final packages will be compiled for each facility or groups of facilities and submitted to DOE for approval. As these packages are approved and DOE agrees that the facility or facilities meet the turnover requirements, DOE will agree to accept the facility or facilities at turnover.

#### **5.5.6 Facility Assessment Report Preparation**

A report will be prepared documenting the due diligence process and documenting the facilities' compliance or noncompliance with the turnover requirements.

#### **5.5.7 Assessment Schedule**

It is important that work on the procedure for due diligence and facility assessment begin shortly after the USEC deactivation and shutdown plan is provided to DOE. The facility assessment should begin no later than 180 days before turnover and should be completed and documented by the turnover date.

### **5.6 Determination of Environmental Permit and Environmental Regulatory Agreement Modifications Needed**

There should be no National Environmental Policy Act (NEPA) requirements for the return of a GDP. The returned GDP will come back to DOE as a result of notice provisions of the lease, and there is no federal agency action involved.

On July 1, 1993, when USEC operations were separated from DOE operations at PORTS and PGDP, the various environmental permits and environmental regulatory agreements at the plants were divided between USEC and DOE based on ownership of the operations requiring the permit. At turnover, the USEC operations governed by permits and agreements would revert to DOE, along with responsibility for the permits and agreements.

It is necessary before notification to understand the required modifications and the time required to negotiate such modifications.

The following permits and agreements are in place at PGDP.

- USEC and DOE hold separate permits for the Kentucky Pollutant Discharge Elimination System for water outfalls.
- USEC holds the Asbestos Abatement Certificate.
- DOE and Bechtel Jacobs Company (the M&I contractor) hold the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Permit for DOE.
- DOE holds the C-746-U Sanitary Landfill Permit.

- DOE holds the C-746-S and C-746-T Sanitary Landfill Permits.
- Both USEC and DOE hold air operating permits.
- DOE holds the Toxicity Characteristic Leaching Procedure Federal Facilities Compliance Agreement (FFCA).
- DOE holds the Toxic Substances Control Act FFCA.
- USEC holds the Agreed Order/Site Treatment and Disposal Plan.
- DOE holds the Site Treatment Plan.
- DOE holds the Federal Facilities Agreement.

The following permits and agreements in place at PORTS.

- Both USEC and DOE hold permits for the National Pollutant Discharge Elimination System (NPDES) for water outfalls.
- DOE holds the RCRA Hazardous Waste Permit.
- DOE holds the air operating permits as of July 1, 1993; USEC is responsible for any new sources that they generate.
- DOE holds the Office of Environmental Policy Analysis (OEPA) Director's Findings and Orders for the Site Treatment Plan.
- USEC holds the Director's Findings and Orders for the Site Treatment and Disposal Plan.
- DOE holds the Toxic Substances Control Act FFCA.
- DOE holds the Land Disposal Restrictions Director's Findings and Orders.
- DOE holds the OEPA Consent Decree and the U.S. Environmental Protection Agency Consent Order.

Detailed discussion of the permits and agreements at both sites, including expiration dates, needed modifications, and actions required, are contained in Appendix D to this document. Appendix D is an updated version of a 1996 study.<sup>5</sup>

At turnover, the permits and agreements in place at the affected plant should be modified to reflect the shutdown of plant operations and recombined into a single set of permits and agreements with DOE as the responsible party.

Negotiations with the appropriate regulatory authority should begin shortly after notification, and there should be no problem concluding negotiations in time to make the needed changes at turnover. Because

<sup>5</sup> *GDP Turnover Contingency Planning Regulatory Compliance Plan*, EFS-95-006, Lockheed Martin Energy Systems, Inc., October 1995.

these negotiations can be completed well within the 2-year window between notification and turnover, there is no need for additional DOE action before notification.

### **5.7 Impact on EM and UP Lifecycle Baseline**

The GDP Turnover Report is a planning document in anticipation of USEC returning either PORTS or PGDP to DOE. Because the timing of such a return is not known, for planning purposes, estimated costs are presented as increments to the Environmental Management (EM)/Uranium Programs (UP) lifecycle baselines rather than attempting to place the costs in the proper fiscal year. These anticipated costs should be included in a budget resources plan that should be completed before notification to manage the DOE responsibilities for the project until funding can be provided through the normal budgeting process. This plan should also contain a change package that can be submitted to update the annual and lifecycle baseline documents.

Both EM and UP currently have responsibilities for DOE-retained facilities at PORTS and PGDP. EM has responsibility for remedial actions and waste management and UP has responsibility for depleted  $UF_6$  management, HEU management, and the GDP facilities not needed by USEC for uranium enrichment. To ensure a smooth transition of the shut-down plant into D&D, it is recommended that the EM and UP programs be integrated into one program dedicated to cleanup and D&D of the returned plant.

Once notification is received, reallocation and reprogramming actions will be necessary to place the necessary funds into the proper fiscal year for the year of notification, and perhaps the following budget year (BY-1) and the year of termination (BY), depending on the point at which USEC notification is made during the Congressional budget process. Planning for funding for the first year that can be budgeted through the normal Congressional process should begin immediately after notification.

#### **5.7.1 Expenditures before Notification**

The GDP Turnover Planning Study has identified one critical area that requires significant effort and funding before notification. Because a significant number of facilities at both operating GDPs are heated with waste heat from the gaseous diffusion process, a system must be designed and installed to provide heat to those facilities before the first winter following the removal of  $UF_6$  inventory. USEC may elect to reduce power levels quickly after notification, and it is unlikely that there will be enough time to provide alternate sources of heat to facilities that are now heated by waste process heat.

Funding should be allocated now to perform preliminary engineering studies to determine the preferred method of providing alternate heat sources or winterizing systems to withstand cold weather. The preliminary engineering studies should be subcontracted through the M&I and should result in a scope of work and performance specifications that can be incorporated into an RFP for a design/build contract to perform the work. With the scope of work and performance specifications available at notification, installation of alternate heat sources and/or winterization should occur before the first winter after  $UF_6$  inventory removal.

It is recommended that \$700,000 be identified in the current fiscal year (FY) 2000 baseline to fund engineering studies to provide the information needed on alternate heat sources to ensure that RFPs for design/build subcontracts can be issued soon after notification. Details of this work are in Chap. 5, Sect. 5.1, "Work to Provide Heat to Plant Facilities," and in Appendix C.

It is also recommended that an additional \$100,000 be identified in the current FY 2000 baseline to fund various minor prenotification activities, such as power negotiations; participation with USEC on the deactivation and shutdown plan; and work to prepare baseline change packages and budget submissions to be implemented upon notification.

#### **5.7.2 Expenditures during the 2-Year Period from Notification until Turnover**

DOE activities required during the 2-year period from notification until turnover are described in Chap. 7.

Funds will be required for various DOE tasks and activities between notification and turnover. The largest single set of transition expenditures is expected to be the design and construction of systems to provide alternate heat sources for plant buildings now heated by waste process heat and winterization of buildings that do not need heat for ongoing missions but do require preparation for cold weather. Approximately \$30 million dollars is estimated for this work if PORTS is the plant chosen for shutdown and return, and approximately \$20 million dollars is estimated if PGDP is the chosen plant. The difference between the PORTS and PGDP estimates reflects the fact that PORTS has many more facilities heated with waste heat than does PGDP. Approximately two-thirds of these funds will be needed in the first year after notification, with the remainder needed in the second year.

Environmental permits, modifications, and regulatory agreements must be negotiated before turnover. Two full-time equivalents for the 2-year period are anticipated for the purpose of rewriting permits and regulatory agreements and meeting and negotiating with the environmental regulators, at a cost of approximately \$150K annually.

The site Safety Analysis Report (SAR) must be modified to reflect plant shutdown and turnover. If NRC remains the regulator after turnover, the current form of the NRC Certification Application document must be modified to reflect plant shutdown; if DOE assumes regulatory authority at turnover, the approved 1995 DOE SAR must be modified to include additional facilities that are shut down and returned to DOE. In either case, the expenditure of approximately \$2.0M during the first year and \$2.0M during the second year after notification is estimated.

One full person-year is expected to be required to work with DOE to successfully negotiate needed power contract changes. A total of \$150K is needed, divided equally between the 2 years.

Beginning at notification, requests for proposals are necessary for subcontracts to perform various tasks. Implementation of the Subcontracting Strategic Plan described in Sect. 5.2.2 requires issuance of several RFPs during the 2-year period to ensure that subcontracts are in place before and at turnover, thus allowing transition of former USEC employees to M&I subcontractors. Resources necessary to complete the RFPs are anticipated to be \$1.0M in the first year after notification and \$1.0M in the second year.

It is recommended that the affected plant M&I core staff be increased by approximately ten to provide the resources to review and approve the USEC deactivation and shutdown plan and monitor USEC activities during deactivation and shutdown. Increasing the M&I core staff by approximately ten will require \$1.5 million per year.

The Due Diligence Validation Task for deactivation and shutdown, which is described in Sect. 5.5 will occur primarily during the second year after notification. This task will cost approximately \$2.5 million, which is an estimate based on Bechtel Jacobs Company's experience in due diligence requirements during the M&I contract transition in 1998. Approximately \$300K will be needed in the first year after turnover, and approximately \$2.2 million will be needed during the second year.

Reindustrialization efforts at the two sites, including performing environmental assessments, building documentation, and site support are estimated to be \$1.1 million during the first year and \$1.2 million during the second year.

The funding requirements for the 2-year transition period between notification and turnover are summarized in Table 5.3.

**Table 5.3 Funding Requirements for the 2-Year Transition Period between Notification and Turnover**

<b>Task</b>	<b>Funds during year 1</b>	<b>Funds during year 2</b>	<b>Total</b>
Alternate heat sources and winterization	\$20M/13.3M <sup>b</sup>	\$10M/6.7M <sup>b</sup>	\$30.7M/20.7M <sup>b</sup>
Perform miscellaneous prenotification activities			\$100K
Negotiate environmental permits and regulatory agreements	\$150K	\$150K	\$300K
Modify SARs	\$2.0M	\$2.0M	\$4.0M
Negotiate needed power contract changes	\$75K	\$75K	\$150K
Implement subcontracting strategic plan	\$1.0M	\$1.0M	\$2.0M
Increase M&I core	\$1.5M	\$1.5M	\$3.0M
Perform due diligence validation	\$300K	\$2.2M	\$2.5M
Reindustrialization efforts	\$1.1M	1.2M	\$2.3M
	<b>PORTS totals:</b>		
	\$26.125M	\$18.125M	\$44.25M
	<b>PGDP totals:</b>		
	\$19.425M	\$14.825M	\$34.25M

<sup>b</sup>PORTS/PGDP

### 5.7.3 Postturnover Expenditures

DOE expenditures at the shut down GDP are expected to increase by approximately \$40M after turnover. The cost increase is based on retaining approximately 400 employees to operate and maintain the infrastructure, essential services, and additional S&M requirements resulting from the return of a shut-down GDP. These expenditures will cover S&M and services such as Fire Protection, Plant Shift Superintendent, Utilities Operations, Power Operations, and Security Services. For this reason, it is recommended that D&D of the facilities begin as soon as possible and be completed as soon as funding and resources permit. Following completion of D&D, long-term stewardship costs included in the FY LCB reach a minimum of \$7M at PORTS and \$4.5M at PGDP.

## **5.8 Preparation of Decontamination and Decommissioning (D&D) Plan and Cost Estimate**

When USEC decides to return a GDP to DOE under the DOE/USEC lease, USEC must shut down the plant and meet the turnover requirements that are described in the lease before DOE accepts the plant. Meeting the turnover requirements ensures that the returned plant is ready for acceptance into the D&D program. ORGDP was shut down in 1985, and more than 10 years passed before serious D&D work began. During that time, much plant knowledge that would have been useful at the beginning of D&D was lost. It is recommended that D&D of a returned plant from USEC begin as soon as possible after the plant or portions of the plant are available and ready for D&D.

### **5.8.1 Worker Training and Placement**

Currently, the two GDPs are operated and maintained by trained and experienced workers. These workers perform operations and maintenance tasks that are similar to process equipment preparation and removal tasks in D&D. The workers are also trained in ES&H issues that are important to the D&D effort. Workers that are available as a result of declining USEC needs following notification can, with a minimum of D&D-specific training, move directly to D&D work. Because both plants now have facilities that are ready for early D&D actions, such as C-410, C-420, and C-340 at PGDP, and X-770, X-3346, and X-3001 at PORTS, D&D work can begin before turnover.

Anticipated worker training and placement to minimize workforce disruption between USEC notification of the intent to return a plant and the initiation of D&D work is shown schematically in Fig. 5.3.

It is expected that workers will begin to be displaced by USEC at or shortly after notification. Once USEC decides to shut down and return a plant, operations and preventative, predictive, and corrective maintenance plans would most likely be altered, and some of the workers would be available almost immediately. In Fig. 5.3, the boxes beginning with turnover notification and proceeding vertically downward show schematically the anticipated actions that USEC will take to shut down and turn over the affected plant to DOE. As the USEC shutdown progresses, workers will likely be displaced at each step. The figure shows the flow of displaced workers, regardless of the step in the shutdown process that makes them available. If D&D funds are available, then the displaced workers can move directly to job-specific training and then fill needs in the plant facilities subproject, which is the M&I project that accepts the shut down plant facilities when they are returned to DOE. These workers can either move to the M&I core organization for self-performed work, to existing subcontracts associated with the M&I, or to new subcontracts that are needed as a result of additional facilities being returned to DOE.

If the workers are not needed for the plant facilities subproject but can be used in the D&D effort, they will attend a short D&D-specific training program and then move directly to the D&D subproject.

Close coordination between GDP shutdown and turnover and initiation of D&D work at the affected plant will minimize workforce disruption, reduce worker severance costs, and result in expedited D&D completion and the lowest overall lifecycle baseline cost to DOE. This course of action is strongly recommended to DOE.

### **5.8.2 GDP D&D Cost Estimate and Schedule**

Completion of an updated D&D cost estimate and schedule is under way and will be a follow-up to the GDP turnover planning study. The updated D&D study will take advantage of the most recent British Nuclear Fuels Limited experience at Bldg. K-33 in Oak Ridge; reindustrialization experience at Oak

Ridge, PORTS, and PGDP; anticipated labor agreements; recent progress with the Oak Ridge on-site mixed waste disposal cell; and the most recent decisions concerning contaminated metal recycling.

The GDP D&D cost estimate and schedule will be developed assuming minimal reindustrialization and reuse of GDP facilities and infrastructure. Recent discussions with Ohio and Kentucky CRO show little current planning for reuse of the DOE sites. It is recommended that DOE pursue an aggressive program for identifying opportunities for reindustrialization and reuse at the plant to be shut down during the 2-year turnover period. The activities involved are discussed in detail in Appendix F. Significant D&D cost savings may be realized if portions of the shut-down GDP can be decontaminated and reused as per the model in the successful Reindustrialization Program at ETTP in Oak Ridge. Other D&D costs may be deferred for a number of years if facilities are leased to private companies, which in turn create job opportunities at the shut-down plant.

Detailed assumptions for the GDP D&D cost estimate and schedule are listed below:

1. A GDP will be turned over to DOE in the condition described in Sect. 4.4 of the lease, which requires the following:
  - The plant will be shut down.
  - No deposits above always-safe mass will exist.
  - USEC-generated waste will be removed.
  - Radiological and hazardous material records will be provided.
  - No immediate threats to human health and safety will be present.
  - A status report of compliance with ES&H regulatory requirements will be provided.
2. The plant will continue into D&D under either DOE regulation or outside regulation.
3. The M&I contractor will be scoped to perform all D&D, including the major process buildings.
4. Final remediation of some environmental sites, such as soils beneath operating buildings, are "deferred" to D&D (or afterwards). The GDP D&D estimate does not include the ultimate remediation scope of the "deferred" sites. Post-D&D remedial actions at both sites will be addressed separately.
5. Conversion of depleted UF<sub>6</sub>, including management of the cylinder inventory and the uranium tetrafluoride at PGDP is not in this plan and cost estimate (i.e., funded by the EM program). It is outside the scope of the M&I. However, it is assumed that the uranium tetrafluoride disposition will not impact the D&D of facilities (i.e., it will be removed from the DOE facilities by others before D&D).
6. D&D will be started as soon as workers are available for reassignment from the operating plant following notification from USEC of the intent to return the plant. This objective will be achieved by reprogramming additional funds into the site's budgets during the year of notification.

7. Early D&D work now being identified to employ displaced USEC workers from 2000 USEC layoffs is not included in this estimate. It will appear in the current lifecycle baseline.
8. D&D tasks for deactivation and equipment removal/decontamination will be accomplished in accordance with a labor agreement between the M&I and the Paper, Allied-Industrial, Chemical and Energy Workers International Union (PACE).
9. Uncontaminated or minimally contaminated facilities at the GDPs that are in good condition for reuse, are desired by the CROs, and have a risk level within guidelines will be reindustrialized.
10. Certain facilities in good condition and attractiveness at PORTS will have the process equipment removed and will be decontaminated for reindustrialization. Examples are X-3001, X-3002, X-3012, and X-3346. No facilities are assumed in this estimate to be reindustrialized for commercial use at PGDP.
11. The M&I will subcontract infrastructure facilities and operations (including groundwater pump and treatment facilities) until they are reindustrialized or transferred to a DOE long-term stewardship program. The M&I will decontaminate any rad-contaminated utility infrastructure facilities remaining on the sites. Utility infrastructure at both sites will be reindustrialized if desired by the CROs and if prospective leasees can be found.
12. All other facilities, including the major process buildings, will have the equipment removed and will be demolished to grade. The most recent detailed building-by-building list that defines reuse/lease and D&D for both sites is included as Appendix E to this report.
13. Recycling of the GDP process equipment materials and other contaminated materials will not be directed in the scopes of work for the D&D of the process buildings. Recycling of contaminated materials from the process buildings will be a business decision of the bidders. The estimates used will assume limited salvage and recycle of equipment and materials (mostly uncontaminated) from the process buildings, but not the process equipment.
14. Recycling and salvage of other valuable equipment and materials from all of the other facilities will not be directed in the scopes of work for D&D but instead will be encouraged throughout the competitive procurement process for D&D. The estimates used assume varying amounts of uncontaminated or slightly contaminated materials and equipment being recycled by the D&D subcontractors to offset the cost of D&D.
15. An engineered on-site mixed waste disposal landfill will be constructed and used for the disposal of D&D waste and debris. It will also be used for the disposal of soils and debris from remedial actions deferred until D&D (as yet unscopd). D&D waste that is generated before the landfill is operational will be stored until disposal is possible. It will be possible to inter classify materials or equipment and entire pieces of GDP equipment (e.g., converters).
16. DOE reservation lands will be reused as described in the CRO strategic plans. The plan used at PORTS is *Target Industry Analysis for the Southern Ohio Diversification Initiative*, September 1999, pp. 78-81. The plan for PGDP is as described in the Paducah Land Use Controls Assurance Plan (LUCAP).

It is recommended that the GDP D&D cost and schedule update continue without interruption and be completed no later than September 30, 2000.

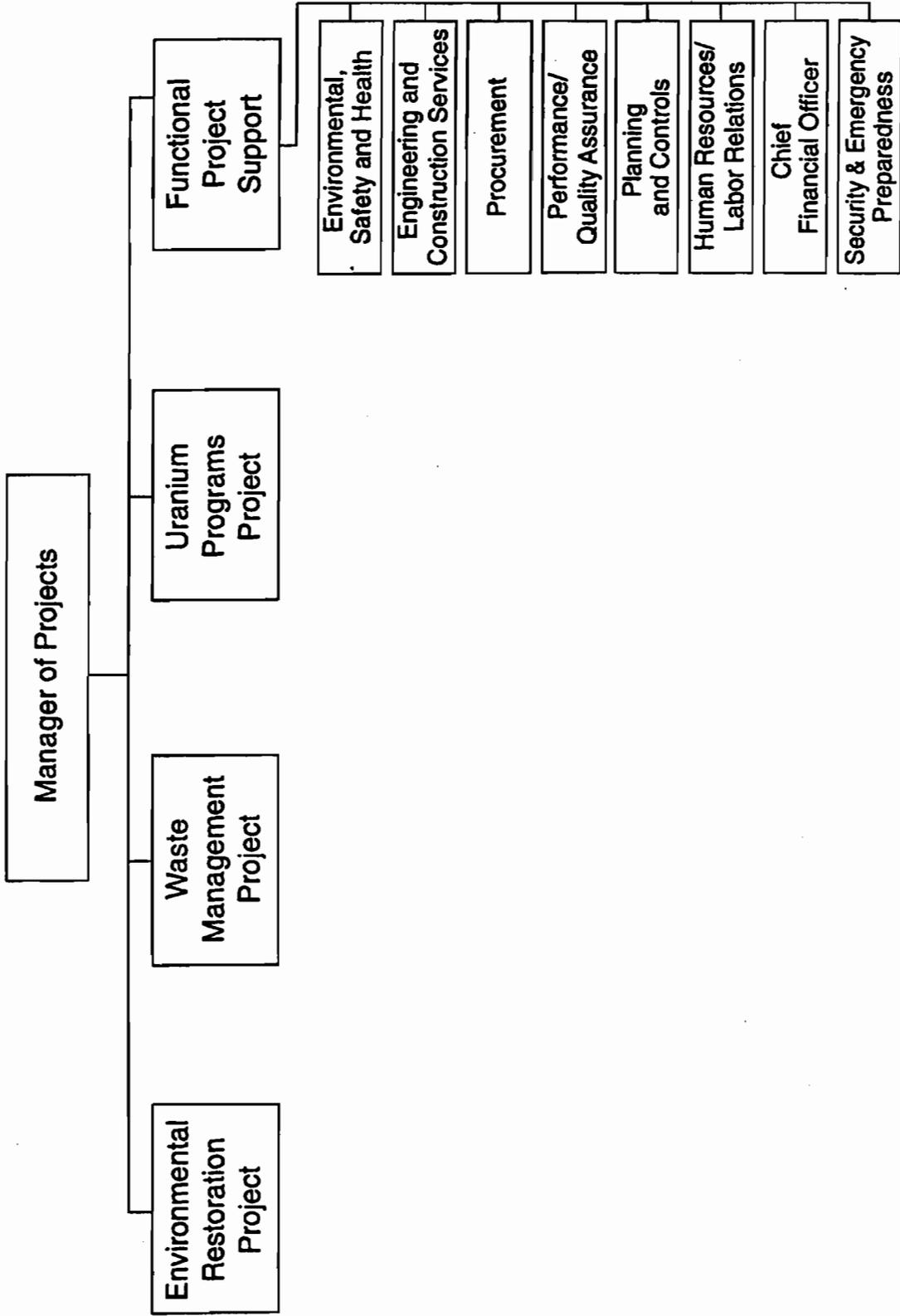


Fig. 5.1 Current M&I Organization

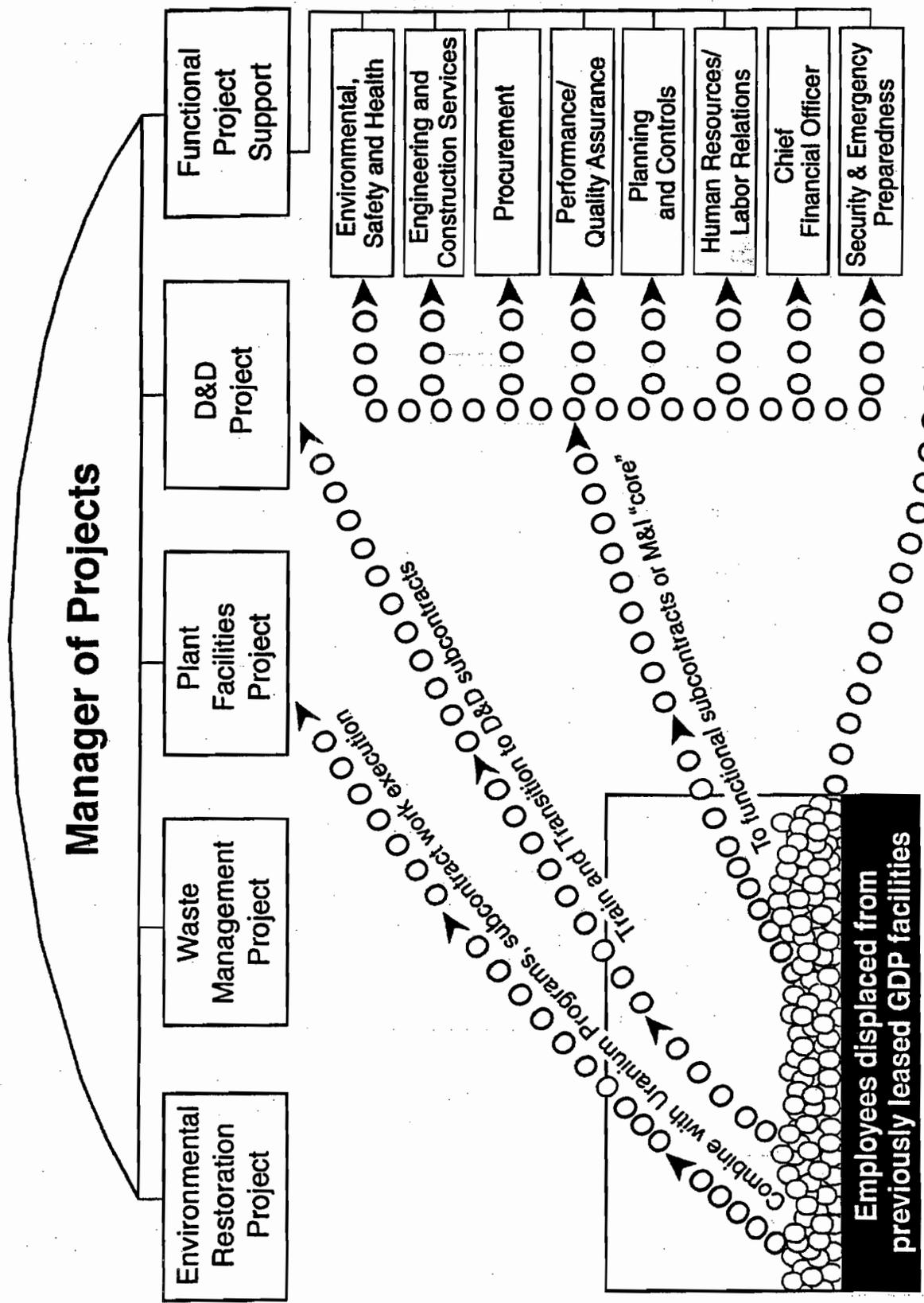


Fig. 5.2 Postturnover M&I Organization

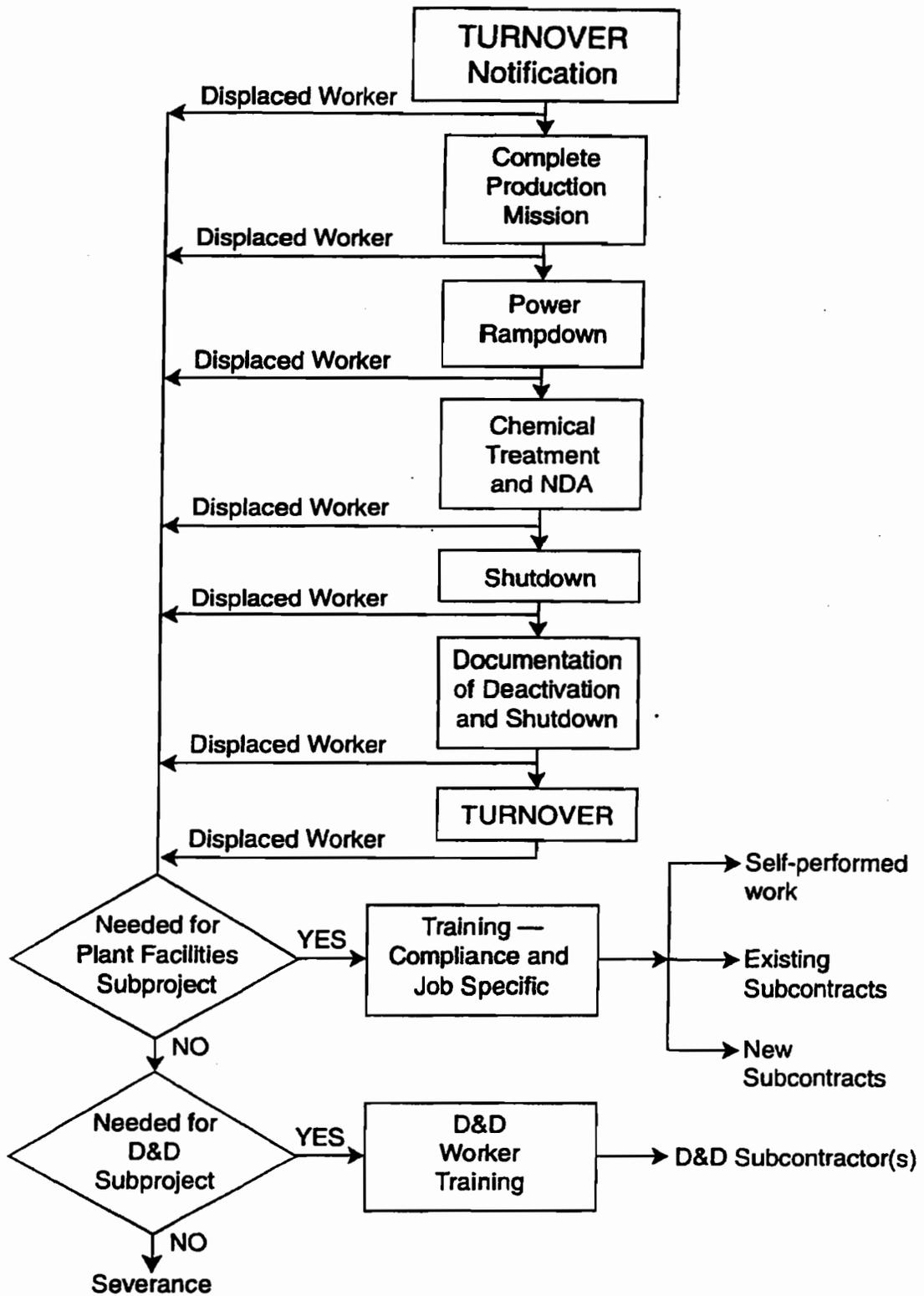


Fig. 5.3 Worker Training and Placement

## **6. USEC ACTIVITIES DURING THE 2-YEAR PERIOD FROM NOTIFICATION UNTIL TURNOVER TO DOE**

This chapter addresses the following:

- USEC activities required to achieve a successful turnover of a GDP to DOE; and
- required documentation at turnover.

### **6.1 Background**

USEC is required to provide DOE with documentation of its plans to place the affected GDP into an acceptable condition for return to DOE consistent with the turnover requirements in Sect. 4.4 of the lease. It is recommended in Chap. 4 that USEC prepare the shutdown and deactivation plan before notification and that DOE participate in that process. It is further recommended that DOE provide USEC with procedures, information, and lessons learned from the 1985 shutdown of ORGDP. It is anticipated that the shutdown and deactivation plan along with the implementation of procedures will describe the activities of the transition period as shown below.

### **6.2 Nondestructive Assay Program**

A nondestructive assay (NDA) program is expected to be used to ensure that there are no uranium deposits greater than always safe mass remaining. Both plants now have NDA capability, but an extensive program will be necessary to meet this portion of the turnover requirements. Because the NDA results will also determine which process cells and auxiliary systems require chemical treatment to remove deposits before shutdown, the NDA program should start no later than notification. A well-planned NDA program should be part of the deactivation and shutdown plan provided to DOE by USEC.

### **6.3 Completion of Production Mission and Rampdown of Power**

It is likely that some product withdrawal requirements will remain from the affected plant at the time that USEC gives the 2-year notification to return the plant. The plant would most probably be operated at near-normal levels for some period of time until product withdrawal requirements are complete. Upon completion of the product withdrawal requirements, the plant would be ready for power reduction and eventual shutdown. After completion of the production mission, plant power reduction will begin. UF<sub>6</sub> feeds will be shut off, and the in-process inventory will be removed via the product withdrawal and tails withdrawal facilities. Process auxiliary facilities, including the Evacuation Booster Stations at PORTS and the Purge and Evacuation Stations at PGDP (same system, different names at the two plants) will be used to reduce in-process inventories to a minimum.

### **6.4 Cell And Auxiliary System Chemical Treatment**

Once in-process inventories have been reduced to a minimum, the remaining inventory should be purged from the system, and, based on NDA results, the cells and auxiliary systems not requiring treatment can be shut down. Cells and auxiliary systems requiring treatment can then be treated with the reaction products processed through the purge cascades, or, in the case of PORTS only, cold traps. Once

treatments are completed and follow-up NDA measurements are conducted, the treated equipment can be shut down. If the NDA measurements confirm deposit removal below always safe mass, no further action is required. If the NDA measurements confirm the continued presence of deposits, then the deposits must be manually removed, and the process equipment integrity must be restored.

### **6.5 Shutdown and Deactivation**

Deactivation should begin as soon as the equipment is shut down. Although deactivation is not fully defined in the lease, the definition contained in DOE Order 430.1A, "Life Cycle Asset Management," is appropriate for this application.

According to DOE Order 430.1A, "deactivation" is the process of placing a facility in a safe and stable condition, including the removal of readily removable hazardous and radioactive materials to ensure adequate protection of the workers, public health and safety, and the environment, thereby limiting the long-term cost of S&M. Actions include the removal of fuel, draining and/or deenergizing nonessential systems, removing stored radioactive and hazardous materials, and performing related actions. Deactivation does not include all decontamination necessary for the dismantlement and demolition phase of decommissioning (e.g., removal of contamination remaining in the fixed structures and equipment after deactivation.)

This definition of "deactivation" includes waste removal and other work specifically stated in the turnover requirements. Recirculating water systems and lube oil systems should be drained, electrical systems should be deenergized, and other systems identified in the deactivation and shutdown plan should be drained or deenergized.

### **6.6 Reuse of Materials at the Operating Plant**

During the course of deactivation and shutdown, USEC may choose to transfer certain materials from the shut-down plant to the operating plant to reduce operating costs. Refrigerant-114, lube oil, water treatment chemicals, and other materials could be transferred to the operating plant rather than disposing of the materials as waste. Because such transfer will reduce DOE's ultimate cost to D&D the plant, USEC should be encouraged to transfer material to the operating plant.

### **6.7 Documentation**

USEC must provide DOE with documentation of the final deactivation/shutdown of the facility and documentation that no future use of the facility is planned. USEC and the DOE validation team should work together to ensure that the final documentation is complete. The documentation should serve as proof that the deactivation and shutdown plan was implemented as written and that the turnover requirements were met.

## 7. DOE ACTIVITIES DURING THE 2-YEAR PERIOD FROM NOTIFICATION UNTIL TURNOVER FROM USEC

This chapter addresses the following:

- employee and community relations before and after turnover;
- the implementation of the strategies described in Chapter 5;
- required safety basis revisions; and
- preparation of the postturnover plan.

### 7.1 Communications with Employees and Other Stakeholders

There will be a great deal of interest from USEC, DOE, and DOE contractor employees at the plant that is chosen for shutdown. In addition, community leaders and state and federal officials will be requesting as much information as possible to seek assistance for the workers who are affected and for their region.

The decision to shut down one of the GDPs will result in national and regional media attention. Extensive up-front planning will be required to ensure a comprehensive, timely, open, and accurate communications policy is developed to address the many different entities needing information.

As soon as USEC notifies DOE of the intent to return a plant and names the plant, DOE should begin an intensive communications program for employees and other stakeholders. Communications should include the fact that DOE has planned for the GDP turnover, and rather than shutting the plant down and walking away, that DOE is committed to enter the D&D phase, possibly even before turnover is official. The concept of transitioning displaced USEC employees, directly to the M&I contractor, both to the plant facilities subproject and to the D&D project, should be emphasized to mitigate labor reductions and lessen economic impacts. A communications planning strategy would include, at a minimum, the following:

- initial informational briefings and fact sheets for employees and union leadership;
- teleconference with state/federal officials;
- press briefing for media;
- toll-free hotline for employees to call in with questions;
- stakeholder meetings in local areas surrounding the plant;
- meetings for employees and their families to discuss options/benefits;
- regular communications bulletins (both electronic and hardcopy formats) to keep employees informed of developments; and
- news updates to area media and stakeholders.

In-plant employee meetings, stakeholder meetings held outside the plant, public meetings, and written informational bulletins should be used to communicate information on plant shutdown and the transition of employees. Because notification may come without prior warning, advance preparation for the communications needs of GDP turnover is warranted.

### **7.2 Monitoring of USEC Activities and Implementation of a Plan for Validation of Deactivation/Shutdown According to the Lease**

Upon notification, a working group of USEC, DOE, and DOE contractor personnel should be formed to monitor deactivation and shutdown progress throughout the 2-year period between notification and shutdown. This group should oversee work between notification and turnover using the USEC deactivation and shutdown plan as criteria for completion. The working group should ensure that the final documentation provided under the lease is thorough and complete. It is important that USEC and DOE cooperate in this effort to avoid any misunderstanding of the work necessary to ensure that the turnover requirements are met. The working group will also provide oversight of DOE activities, such as design and installation of alternate heat sources and winterization of plant buildings, and it will concentrate on the interface between that work and USEC work.

The detailed plan for validation of deactivation/shutdown that is described in Sect. 5.5 must be completed and implemented. The due diligence walkdown and facility assessment phase of the validation plan should begin no later than 180 days before turnover and should be completed and documented by the turnover date. The working group should oversee the validation activities to ensure that turnover requirements are met.

### **7.3 Negotiation of Power Contract Changes**

Because DOE is responsible for the power contracts at both plants, DOE must negotiate the required changes, both for the period between notification and turnover and the period after turnover. USEC should be involved in the power negotiations because USEC is responsible for the required changes before turnover. DOE is responsible for its own power needs after turnover for maintaining the site and implementing D&D.

Issues involved in negotiating needed power contract changes are discussed in Sect. 5.3. Power contract negotiations, if possible, should begin before notification, but certainly no later than immediately following notification.

### **7.4 Negotiation of Environmental Permit and Regulatory Agreement Modifications**

Section 5.6 and Appendix D describe environmental permit and regulatory agreement changes that will be required as a result of the turnover of a GDP to DOE. DOE should inform affected federal and state regulatory authorities as soon as notification from USEC is received, and together, DOE and the regulators can plan negotiations. These negotiations will be a reversal of the process used following the formation of USEC as a government corporation in 1993. Negotiations to reunite the site permits and agreements under one owner should not be difficult, and the 2-year period before turnover should be more than enough time to initiate and conclude successful negotiations for permit and regulatory agreement modifications.

## **7.5 Authorization Basis Revisions**

There are two separate sets of authorization basis documents for the two plants. SAR and Technical Safety Requirements (TSR) for the leased portion of the plants are contained within the NRC certification documentation for each plant. USEC is responsible for maintaining these documents. These documents are up-to-date, and changes that are necessary are implemented promptly through a rigorous plant change process.

The nonleased portions of the two plants are covered by an approved 1995 DOE SAR and 1998 TSR at each plant. Necessary updates for the 1995 SAR have been made through Unreviewed Safety Question Determinations (USQDs) for issues that have required action since 1995. The 1995 SAR, the 1998 TSR, and the USQDs constitute the safety basis documentation for the DOE-retained facilities at each plant. An updated SAR was written in 1998 incorporating the USQDs, but DOE has not approved that document.

Neither the current USEC SAR nor the 1995 DOE SAR will provide an adequate safety basis for a shut-down and returned plant. Adequate authorization basis documentation for the returned plant must be developed before turnover. This will be a major task, and it is recommended that work begin immediately upon notification.

It is further recommended that, because the NRC-approved SAR is up-to-date at both plants, authorization basis documentation development for the returned plant should begin with the NRC-approved SAR. This document can be revised to apply to the shut-down and deactivated plant. The final authorization basis document should include D&D activities, as well as maintenance of the returned plant through the plant facilities project.

## **7.6 Implementation of a Plan for Plant Changes after Shutdown**

The work required to provide alternate heat sources to plant buildings now heated by waste process heat, and the work required to winterize process buildings and facilities, are described in Sect. 5.1 and Appendix C. The recommendation was made to conduct engineering studies now, before notification, in order to define the facilities and equipment needed to accomplish these tasks as economically as possible. The results of the engineering studies should be incorporated into RFPs for design/build subcontracts to install needed facilities and equipment. The RFPs should be issued as soon as possible following notification to ensure that the plant will be ready for the first cold weather following shutdown.

The M&I organization at the affected plant is described in Sect. 5.2. The postturnover M&I organization as shown in Fig. 5.2 should be implemented as soon as possible after deactivation and shutdown begins. As deactivation and shutdown proceeds, personnel can smoothly move from USEC to either current M&I tasks, future plant facilities projects, or D&D projects. The training program described in Sect. 5.2.4 should be implemented during this period to ensure that as many of the displaced USEC workers as possible can transition to DOE work. In addition, as validation of the deactivation and shutdown proceeds, the results of that effort will prepare the plant facilities subproject to accept additional facilities at turnover.

The Subcontracting Strategic Plan (SSP) that is described in Sect. 5.2.2 should be implemented as DOE work progresses during the 2-year transition period. The goal of SSP is to transition workers to subcontractors under the M&I contract at turnover.

### **7.7 Preparation of Workforce Transition Plan**

Early in the 2-year transition period, a workforce transition plan similar to the plan that was prepared and implemented for the Oak Ridge M&I contract for the corporate transition should be prepared for turnover. The workforce transition plan should be based on training and placing displaced USEC workers as shown schematically in Fig. 5.3 into current M&I subcontracts, new M&I subcontracts associated with the plant facilities subproject, and new M&I subcontracts associated with plant D&D. The workforce transition plan should recognize that this work may be subcontracted or self-performed by the M&I contractor. The plan should also recognize that displaced workers may transition to the M&I contractor or associated subcontractors throughout the transition period or at turnover. It is unlikely that DOE work will be available for all displaced USEC workers, necessitating some VRIFs and IRIFs.

It is assumed that workforce transition will be accomplished in a manner similar to the corporate transition under the current M&I contract, with a new contract definition of "grandfathered" employees that is tailored to the GDP turnover circumstances. It is anticipated that transitioning employees would be entitled to "substantially equivalent pay and benefits" as stated in the current M&I contract and consistent with applicable labor agreements. These assumptions should be maintained unless DOE directs otherwise.

### **7.8 Preparation of Postturnover Plan**

During the 2-year period before turnover, a detailed postturnover plan should be prepared. This plan should describe DOE activities after turnover and should integrate the S&M program at turnover (which should be a declining program) with the D&D program (which should be a growing program). The postturnover plan should extend until the completion of D&D and the inception of long-term site postclosure S&M.

## **8. TURNOVER OF SHUT-DOWN AND DEACTIVATED GDP TO DOE**

This chapter addresses the following:

- implementation of the postturnover plan; and
- details of the work that should be completed by the turnover date.

If the tasks described in Chaps. 4 through 7 of the GDP turnover report are successfully accomplished in a timely manner, the actual date of turnover should be anticlimactic. The extensive efforts to prepare for turnover should result in a smooth transition to DOE control. On the date of turnover, the M&I contractor organization should assimilate all of the previous USEC operations into the subprojects and functions at the site. The four subprojects—Environmental Restoration, Waste Management, Plant Facilities, and D&D—and the support functions should provide an effective organization for postturnover activities. The postturnover plan that was completed before turnover should be implemented. The following should be completed by the turnover date:

- accurate baseline describing the work and required funding;
- funding availability;
- an approved SAR/TSR for the postturnover plant;
- Subcontracting Strategic Plan;
- M&I organization changes and workforce transition;
- DOE Site Office and ORO changes;
- postturnover power contract;
- environmental permit and regulatory agreement modifications;
- validation of deactivation/shutdown according to the lease;
- DOE/USEC lease modifications;
- postturnover nuclear regulatory structure; and
- use of displaced USEC workers on D&D work where possible.

**APPENDIX A**

**SECTION 4.4—TURNOVER REQUIREMENTS**

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**Section 4.4—Turnover Requirements.** At the end of the Lease Term or at any time the Corporation exercises its option in Section 3.4(b) hereof or terminates this Lease pursuant to Section 12.1 hereof, or terminates this Lease pursuant to Section 9.3 hereof (except that in the case of termination under such Section 9.3, only with respect to facilities which are not destroyed), the Corporation shall, prior to returning to the Department any facility which constitutes the Leased Premises, take the following actions with respect to such facility (collectively such actions being referred to as the "Turnover Requirements"):

- (a) Provide the Department with documentation of its plans to place such facility into an acceptable condition for return to the Department consistent with the requirements described in subsections (b) through (f) of this Section.
- (b) Terminate facility operations. Complete and document the final deactivation/shutdown of the facility and document that no future use of the facility is planned. Remove solid deposits of  $\text{UO}_2\text{F}_2/\text{UF}_6$  to the extent necessary to prevent criticality, using an in-place removal process, such as the chemical fluorination treatment; and ensure that nothing adversely affects the operability of the purge cascade, the coolant, drainage, storage systems, HV/AC systems and air filtration systems.
- (c) Remove all waste generated by the Corporation in such facility (including any material that is subject to classification as a hazardous waste under the Solid Waste Disposal Act, as amended) and which is subject to and authorized by Laws and Regulations for offsite disposal. The Corporation will remain responsible for the ultimate treatment and disposal of any waste generated by the Corporation, and for which the Department is not responsible, except as may be otherwise provided in this Lease.
- (d) For structures at the facility, provide the Department with the Corporation's available radiological/hazardous materials records, available documentation of the configuration of the facility and related systems, available drawings, specifications, procedures, manuals, and available unplanned occurrences records applicable to the facility. For soil, surface water, and groundwater conditions at the facility, provide the Department with the Corporation's available data and reports that describe those conditions and the nature and extent of the contamination therein.
- (e) Place structures to be returned at the facility in a safe secure condition, removing any immediate threats to human health and safety. Existing radiation monitoring systems shall be in a physical condition adequate to monitor the potential release of any radioactive contamination. The most current radiation contamination/hazardous and toxic material survey done by the Corporation for the facility and surrounding areas shall be provided to the Department.
- (f) Provide to the Department a status report of the facility's compliance with environmental, health, and safety regulatory requirements. If the facility is in noncompliance, a strategy for achieving compliance will be developed by the Corporation and provided to the Department.

**APPENDIX B**

**ENERGY POLICY ACT, USEC PRIVATIZATION ACT, AND  
TREASURY/USEC AGREEMENT—SECTIONS REFERENCING THE  
LEASE AGREEMENT**

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**Energy Policy Act of 1992**  
**Chapter 24—Rights, Privileges, and Assets of the Corporation**  
**Section Referencing the Lease Agreement**

(1) **Sec. 1403. Leasing of Gaseous Diffusion Facilities of Department.**

(a) **In General.**—The Corporation shall lease the Paducah Gaseous Diffusion Plant in Paducah, Kentucky, the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, and related property of the Department, for a period of 6 years from the transition date. Thereafter, the Corporation shall have the exclusive option to lease such facilities and related property for additional periods.

(b) **Terms of Lease.**—The Corporation and the Department shall set mutually agreeable terms for a lease under subsection (a), including specifying annual payments to the Department by the Corporation to be made. The amount of annual payments shall be equal to the cost incurred by the Department in administering the lease and providing services related to the lease to the Corporation (excluding depreciation and imputed interest on original plant investments in the Department's gaseous diffusion plants and costs under subsection (d)).

(c) **Exclusion of Facilities for Production of Highly Enriched Uranium.**—Subsection (a) shall not apply to Department facilities necessary for the production of highly enriched uranium. The Secretary may grant to the Corporation access to such facilities for purposes other than the production of highly enriched uranium.

(d) **DOE Responsibility for Preexisting Conditions.**—The payment of any costs of decontamination and decommissioning, response actions, or corrective actions with respect to conditions existing before the transition date, in connection with property of the Department leased under subsection (a), shall remain the sole responsibility of the Department.

(e) **Environmental Audit.**—The Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall conduct a comprehensive environmental audit identifying environmental conditions that will remain the responsibility of the Department pursuant to subsection (d) after the transition date. Such audit shall be completed no later than the transition date.

(f) **Treatment Under Price-Anderson Provisions.**—Any lease executed between the Secretary and the Corporation under this section shall be deemed to be a contract for purposes of section 170 d.

(g) **Waiver of EIS Requirement.**—The execution of the lease by the Corporation and the Department shall not be considered a major Federal action significantly affecting the quality of the human environment for purposes of section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332).

**USEC Privatization Act**  
**April 26, 1996**  
**Sections Referencing the Lease Agreement**

**(1) SEC. 3106. TRANSFERS TO THE PRIVATE CORPORATION.**

Concurrent with privatization, the Corporation shall transfer to the private corporation—

- (1) the lease of the gaseous diffusion plants in accordance with section 3107, and
- (2) all contracts, agreements, and leases under section 3108(a).

**(2) SEC. 3107. LEASING OF GASEOUS DIFFUSION FACILITIES.**

(a) **Transfer of Lease.**—Concurrent with privatization, the Corporation shall transfer to the private corporation the lease of the gaseous diffusion plants and related property for the remainder of the term of such lease in accordance with the terms of such lease.

(b) **Renewal.**—The private corporation shall have the exclusive option to lease the gaseous diffusion plants and related property for additional periods following the expiration of the initial term of the lease.

**(3) SEC. 3108. TRANSFER OF CONTRACTS.**

(a) **Transfer of Contracts.**—Concurrent with privatization, the Corporation shall transfer to the private corporation all contracts, agreements, and leases, including all uranium enrichment contracts, that were—

- (1) transferred by the Secretary to the Corporation pursuant to section 1401 (b) of the Atomic Energy Act of 1954 (42 U.S.C. 2297c(b)), or
- (2) entered into by the Corporation before the privatization date.

**Treasury/USEC Agreement**  
**July 14, 1998**  
**Section Referencing the Lease Agreement**

(1) 1. Post-Closing Conduct.

c. USEC and the USEC Companies acknowledge that the provisions of the Privatization Act provide that the Board, with the approval of the Secretary of the Treasury, shall transfer the interest of the United States in USEC to the private sector in a manner that provides for the continuation of the operation of the Plants. Accordingly, from and after the Closing until at least January 1, 2005, the USEC Companies shall continue Operation of both of the Plants; provided, however, that this paragraph shall not restrict the termination by the USEC Companies of the Operation of a Plant if a Significant Event has occurred with respect to such Plant. For the purpose of this paragraph, (i) "Operation" shall mean the use of the Plants for the provision of enrichment services, at a level reasonably determined appropriate by the USEC Companies, and (ii) a "Significant Event" shall mean: (u) any event beyond the reasonable control of the USEC Companies including, but not limited to, fires, floods, acts of God, transportation delays, acts or failures to act of government authorities or third parties, or inability to secure labor, materials, equipment or utilities that prevents the continued Operation of a Plant by the USEC Companies, (v) that the Operating Margin of USEC Inc. is less than 10% in a twelve consecutive month period, (w) that the long-term corporate credit rating of USEC Inc. is, or is reasonably expected in the next twelve months to be, downgraded below an investment grade rating, (x) the Operating Interest Coverage Ratio of USEC Inc. is less than 2.5x in a twelve consecutive month period, (y) a decrease in annual worldwide demand for Separative Work Units ("SWU") to less than 28 million SWU, or (z) a decrease in the average price for all SWU under USEC's long-term firm contracts to less than \$80 per SWU (in 1998 dollars). For purposes of this paragraph, (i) "Operating Margin" shall mean (x) earnings plus interest, taxes and any extraordinary, nonrecurring charges divided by (y) total revenue, (ii) "Operating Interest Coverage Ratio" shall mean (x) earnings plus interest and taxes divided by (y) gross interest expense. Nothing contained in this Agreement shall be construed to modify any obligation that USEC or the USEC Companies may have with respect to the Plants under the Lease Agreement between USEC and the Department of Energy dated as of July 1, 1993, as amended, or under any state or federal law, rule, regulation, order or permit applicable thereto.

**APPENDIX C**

**WORK TO PROVIDE HEAT TO PLANT FACILITIES**

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## C.1 Winterization Requirements

This section discusses specific facilities and systems that now use waste heat for space heating and provides a brief description of winterization requirements that must be met before the first winter after loss of process heat.

This section is an update of the 1996 Turnover Study that was documented in EFS-95-007.<sup>1</sup> The information that follows will provide a starting point for developing the detailed scope and descriptions of work to be included in the RFPs for subcontracts (1) to replace the RHW heating system in the facilities now heated by RHW and (2) to winterize process buildings.

### C.1.1 RHW System Conversion Requirements

After the waste heat from the RCW is lost, the RHW system can no longer provide its heating function. The RHW system consists of the necessary piping, valves, and pumps to circulate hot RCW return water from the X-330 and X-333 process buildings at PORTS and the C-335 and C-337 process buildings at PGDP to the various site buildings using this heat source.

For this plan, it is assumed that all facilities on the RHW systems will continue to require heat except the X-630 and X-633 pump houses at PORTS. It is possible that some of the GCEP buildings at PORTS could be shut down, but these buildings are that site's most likely candidates for reuse and reindustrialization and should be heated after turnover. Reducing the number of heated buildings would obviously reduce heating costs.

At PGDP, the eight buildings now heated from C-335 were originally heated by steam from the steam plant. It is feasible to again use steam as the heat source for these buildings, especially after process steam is no longer needed. However, it is necessary to perform a cost analysis to compare the cost of returning to steam or using steam to heat the RHW system water that now supplies these buildings. One building, C-360, was originally built using RHW for heating and has never had steam heat.

At PORTS, only four of the eight GDP site buildings now heated by RHW were originally heated by steam from the existing steam plant. The other buildings were designed for RHW heating only, as were all nineteen buildings located on the GCEP site. X-343, X-533, and X-633 receive their heat from the X-333 RHW system. X-633 will be shut down and winterized, and X-533 can be heated by the original steam system. A heat source for X-343 must be designed and installed. All sprinkler, sanitary, and RHW systems in X-633 will need to be drained. The remaining five GDP buildings and the entire nineteen-building GCEP complex are on the X-330 RHW system, and preliminary analysis suggests keeping this system intact and steam heating the water from the current X-600 Steam Plant. A detailed engineering analysis to confirm this approach or to define a more desirable approach should be conducted.

### C.1.2 Fire Protection Sprinkler Systems Conversion Requirements

Process buildings are protected with sprinkler systems located throughout the operating and cell floors. If sufficient temperatures can be maintained by using existing steam heaters and sealing the building, fire protection can be maintained. An engineering evaluation should be conducted to determine whether this approach is feasible. If temperatures cannot be maintained above freezing with existing

<sup>1</sup> GDP Turnover Contingency Planning Facility Turnover Plan, EFS-95-007, Lockheed Martin Energy Systems, Inc., March 29, 1996.

heaters and building modifications, sprinkler systems will need to be drained and converted to dry-type systems. There are 247 sprinkler systems in the process buildings at PORTS and 247 systems at PGDP. Localized heat will be required at the air-water interface for each individual system after conversion to a dry-type system. An interim fire watch would be required until this conversion can be completed.

Specific to PGDP, there are two fire water systems: the sanitary fire water system and the high-pressure (RCW) fire water system. The high-pressure fire water system supplies the sprinkler systems in the process buildings and in the cooling towers. When the RCW system is taken out of service, the high-pressure fire water system will lose its source of fire water. Therefore, if the process building sprinkler systems must be converted to dry systems, this water supply will need to be changed over from the high-pressure fire water system to the sanitary fire water system or possibly to the plant water system. The plant water system provides makeup water to the RCW system, so there should be adequate capacity in that system to supply the high-pressure fire water system. The current capacity of the sanitary water system may not be sufficient to handle the additional load. An engineering evaluation will have to be made to determine any needed changes to the sanitary fire water or plant water systems.

### C.1.3 RCW Water Cooling System Requirements

The RCW system provides cooling to many individual systems within the diffusion process. These systems must be disconnected, drained, and dried to remove the water before the first winter after process shutdown. The major systems to be winterized are listed in Table C.1.

Table C.1 RCW-Cooled Equipment to be Winterized

System/equipment	PGDP	PORTS
Process condensers	415	470
Lube oil coolers	22	29
Freezer sublimers	30	12
Product and tails withdrawal stations	5	4
Seal exhaust stations	6	6
Cooling tower basins	12	7

Wet air evacuation pump systems will remain operational in each process building to service the cells after shutdown. The water-cooled systems should be converted to sanitary water, and the sanitary water lines should be heat-traced and insulated if sufficient building heat cannot be provided to keep temperatures above freezing.

### C.1.4 Sanitary Water and Sewer System Requirements

If sufficient building heat cannot be provided to prevent freezing, then the sanitary water supply for all nonprocess equipment, such as drinking fountains, restrooms, showers, and air conditioning systems, will need to be disconnected and drained. Heat tracing and insulating should be performed where equipment remains operational. As indicated above, some conversion from RCW cooling to sanitary water cooling may be needed, not only in the process buildings but in certain other building that use RCW, such as X-710 and X-300 at PORTS. Personnel will be consolidated to minimize the heating of

unnecessary equipment and facility areas. All above-ground sewer traps will need to be removed and capped in buildings where temperatures cannot be maintained above freezing.

### **C.1.5 Miscellaneous System Requirements**

*PGDP Air Plant*—About half of the plant's current usage of 8,000 standard cubic feet per minute (scfm) goes to the enrichment cascade. After shutdown, it is anticipated that the usage will be about 4,000 scfm. The compressors in C-335 will be shut down and winterized. The units in C-600, C-607, and C-620 would continue to meet the plant's compressed air needs, either operating or as backup.

*PORTS Air Plant*—The air plant will remain operational in the X-6000 facility. Air compressor systems in X-326, X-330, and X-333 will be shut down and winterized.

*Ventilation Systems*—Ventilation systems will remain intact, but intake and roof exhaust louvers will be closed and sealed to minimize infiltration of cold air.

## **C.2 Winterization Tasks**

A number of tasks are necessary to ensure adequate freeze protection of shut-down facilities and adequate heating of facilities and systems that must remain operable. Five major categories of winterization tasks are described below. Subcontracts should be in place as soon as possible to perform the necessary engineering evaluations and preliminary design work to define the detailed tasks and costs required to complete winterization. This information should be incorporated into an RFP for a design-build subcontract to design and perform the necessary to complete winterization.

### **C.2.1 Convert RHW System**

The RHW system loses its heat source from the RCW system when the UF<sub>6</sub> inventory is removed from the gaseous diffusion process as shutdown proceeds. An alternative heating source needs to be in place and operating before the first winter after the loss of the waste heat source.

Each site has unique and different conditions and will be addressed separately. However, the RHW conversion project at either plant must start at notification at the very latest, and preliminary studies and engineering evaluations should be conducted before notification.

#### **C.2.1.1 PGDP**

The steam heaters in the eight buildings at PGDP that are heated by RHW from C-335 were removed and discarded when the buildings were converted from steam to waste heat. Installation of direct steam heat for these buildings should be compared with using steam to heat plant water, which would be used to heat the buildings now heated by RHW. A ROM estimate of the cost for designing and installing steam heating of plant water to heat these buildings at PGDP is about \$7 million, with 1 to 1½ years necessary for completion. It is important that the design and cost estimate be completed and incorporated into an RFP that can be issued shortly after notification to provide heat before the first winter after heat from RHW is lost.

### **C.2.1.2 PORTS**

PORTS has two systems, X-333 and X-330, that supply waste heat to the facilities heated by RHW. The X-333 system supports the X-343 Feed Vaporization Facility, the X-533 Power Switch House, and the X-633 Pump House. The X-633 Pump House will be shut down, and water systems will be drained. The X-533 Switch House Control Room can be returned to the original steam heat system at an estimated cost of \$50,000, and this conversion would take about 2 months to complete. An alternate heat source must be installed in X-343.

The X-330 RHW system supplies heat to all nineteen GCEP buildings and to the X-623, X-630, X-705, X-700 and X-720 GDP buildings. The X-623 facility is designed only for RHW, as is the entire GCEP. The X-630, X-705, X-720, and X-700 facilities were originally steam heated and converted to RHW. Most steam heaters have been removed or are in disrepair and, considering the size of the facilities, it appears that converting back to steam would be expensive. A proposed course of action is to use the X-600 Steam Plant to supply steam for heating the water in the existing RHW system, but that approach should be confirmed through an engineering evaluation.

The estimated cost of about \$15 million and time of 1½ years to complete the conversion from waste heat to steam heating are rough estimates that should be verified in an engineering study. The ROM cost estimate for PORTS is higher than that for PGDP because PORTS has many more facilities on the RHW system.

### **C.2.2 Convert Process Building Fire Sprinkler Systems**

If sufficient heat cannot be provided to maintain process buildings above freezing, sprinkler systems should be converted to dry-type systems. This work includes draining and drying each system, providing new water-air interface valves, and heating each water-air interface valve. The ROM cost estimate and schedule are about \$12 million and 1½ to 2 years for completion of the 247 fire systems at each site.

If there is insufficient time to install dry-type systems before the onset of cold weather, the sprinkler systems should be drained and an around-the-clock fire watch provided.

### **C.2.3 Winterize RCW System**

The RCW systems at both plants require considerable effort to disconnect, drain, and dry to eliminate freezing and rupture. Table C.2 shows estimates of labor to complete winterization of the cascade systems.

**Table C.2 Labor Estimates to Winterize RCW-Cooled Cascade Equipment**

RCW system element	Labor (person hours)	
	PGDP	PORTS
Process condensers (including booster stations)	6640	7520
Lube oil coolers	352	336
Freezer sublimers condensers	480	96
Tails system coolers/condensers	40	48
Product system condensers	40	48
Seal exhaust pump coolers	592	600
<b>Totals</b>	<b>8114</b> <b>(3.9 person years)</b>	<b>8648</b> <b>(4.2 person years)</b>

The wet air evacuation pump system will be operational and will be converted to sanitary water cooling. The sanitary water lines will be insulated and heat traced if building temperatures cannot be maintained above freezing. The estimated cost and schedule for this conversion are \$50,000 and 1 month for either PGDP or PORTS.

Once the RCW systems have been shut down, the pumps, piping, and cooling towers will need to be winterized by draining the cooling tower basins and removing water from the pump house sprinkler systems and various sanitary water sources. ROM estimates for doing this work are about 2 person years (PY) and 2 to 3 months at either site.

**C.2.4 Winterize Sanitary Water and Sanitary Sewer Systems**

Throughout all process buildings, sanitary water and sanitary sewer systems are used for non-process related systems, such as drinking fountains, restrooms, showers, emergency showers, and eye wash baths. If process building temperatures cannot be maintained above freezing, the buildings must be winterized. All shut-down systems will be disconnected, drained, and capped as necessary. The estimated labor and schedule to complete the task at either PGDP or PORTS are about 0.5 PY and 2 months.

**C.2.5 Winterize Other Systems**

**C.2.5.1 Ventilation Systems**

Louvers on filter rooms and roof louvers will be closed and sealed to minimize intrusion of weather elements into the shut-down process buildings. About 1 PY is required for this task at either site.



**C.2.5.2 Air Plants**

*PGDP*—There are four separate air plants at PGDP: C-600, C-607, C-620, and C-335. The C-607 air plant can be shut down, and the compressors in C-335 will be shut down and winterized. The post-turnover air needs for PGDP will be supplied from C-600 and C-620. The compressors in C-600 will not require any additional work to prepare them for service after turnover. Because of the age of the compressors in C-600, the Centac compressor in C-335 should be moved to C-600. The Centac compressor is the most reliable and productive air plant compressor at PGDP.

The compressors in C-620 share a building with the C-315 tails withdrawal facility and share a common steam supply that provides heat to C-620. It should be possible to keep this line in service. The cost to winterize the PGDP air plants is estimated to be \$100K.

*PORTS*—The air plant in X-6000 will be kept operational to support the site. The other air plants will be shut down and winterized at an estimated cost of \$100K.

**Table C.3. Summary of Winterization Tasks**

Task	PORTS	PGDP
Convert RHW system	\$15M	\$7M
Convert process building sprinkler systems to dry	\$12M	\$12M
Winterize RCW systems	\$620K	\$590K
Winterize sanitary water and sewer systems	\$50K	\$50K
Winterize other systems (ventilation, air plants)	\$200K	\$200K
<b>Total</b>	<b>\$27.87M</b>	<b>\$19.84M</b>

**APPENDIX D**

**ENVIRONMENTAL PERMITS, ORDERS, AND AGREEMENTS**

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This section of the Regulatory Compliance Plan identifies issues that will require DOE's attention during the 2-year transition period relative to environmental permits and regulatory agreements. The issues addressed below deal with known and/or existing permits, orders, and agreements between DOE, EPA, state regulatory agencies, and site-specific agreements with USEC. This document does not include discussions concerning additional agreements that may result from the turnover process except as they apply to existing agreements, orders, or permits. The regulatory issues discussed below and the issues involved are described only in general terms. Specific strategies to deal with each required permit modification or modification of orders or agreements must be developed once postturnover conditions can be defined.

## D.1 PGDP Permits

The following environmental permits at PGDP were reviewed for potential impacts resulting from PGDP turnover. The results of this review are summarized in association with each permit.

### D.1.1 Kentucky Pollutant Discharge Elimination System

**Scope:** Allows for discharge of aqueous effluents to waters of the state

**Issuer:** Kentucky Division of Water (KDOW)

**Date Issued:** Effective January 8, 1998

**Expiration Date:** January 8, 2003

**Permit No.:** KY01012083~ Outfalls 002, 003, 004, 006, 008, 009, 010, 011, 012, and 016 at PGDP

**Signatory:** USEC

**Issues:** Modify current DOE permit to include outfalls listed on USEC's KPDES Permit listed above.

**Transfer/Time Requirements:** Request permit modification to add USEC outfalls to DOE permit. Once the DOE permit is amended, the USEC permit can be modified for termination. Evaluate to ensure that all continuous flow outfalls will still discharge process flows once enrichment operations cease. Remove outfalls no longer needed due to the cessation of enrichment operations and replace with appropriate storm water permits. Allow 1 year to prepare, submit, and obtain permit modification.

**Actions Required:**

1. Evaluate alternative missions for the GDP site for possible permit impacts and modifications.
2. Submit permit modification to add USEC outfalls to DOE's current permit and seek termination of the USEC KPDES permit.
3. Determine which outfalls could be eliminated due to cessation of enrichment operations and alternative missions and submit as part of permit modification.

### **D.1.2 Asbestos Abatement Certificate**

**Scope:** Allows for asbestos abatement at PGDP

**Issuer:** Kentucky Division for Air Quality (KDAQ)

**Date Issued:** Issued every 6 months

**Expiration Date:** Valid for 6 months

**Permit No.:** Changes with each issuance

**Signatory:** USEC

**Issues:** USEC personnel perform asbestos abatement activities at PGDP. Certificate is issued to USEC and identifies personnel trained as asbestos abatement supervisors. A management program is necessary to manage asbestos-containing materials in place until removal.

**Transfer/Time Requirements:** Request certificate modification to remove USEC from certificate, and submit fee. Allow 60 to 90 days to obtain certificate modification.

**Actions Required:**

1. If any portion of the plant remains operating after turnover, with active asbestos abatement performed by the asbestos work crew, notify the state, and request certificate.
2. For portions of the plant that are shut down and turned over, maintain management program pending D&D of facility.

### **D.1.3 RCRA Hazardous Waste Management Permit**

**Scope:** The hazardous waste permit at PGDP is administered by the Commonwealth of Kentucky, and the HSWA corrective action permit is administered by EPA. The HSWA permit also addresses land disposal restrictions and waste minimization. The permit was issued to DOE with Bechtel Jacobs Company as co-operator. USEC was removed from the RCRA permit in 1995 and operates as a 90-day generator of hazardous waste. USEC is not subject to the corrective action provisions of the HSWA permit.

**Issuer:** Kentucky Division of Waste Management and EPA

**Date Issued:** August 19, 1991

**Expiration Date:** August 19, 2001

**Permit No.:** KY8890008982

**Signatory:** DOE and Bechtel Jacobs Company

- Issues:**
1. Although the current permit is believed to be adequate, a permit modification will be required if (1) additional waste streams are generated, (2) increased storage is needed, or (3) increased treatment capacity is required.
  2. Wastes generated by USEC are stored in DOE-permitted areas.

**Transfer/Time Requirements:** None. DOE and Bechtel Jacobs Company already hold the permit.

**Actions Required:** Evaluate the impacts of turnover of leased facilities (i.e., new waste streams or increased storage or treatment not accommodated by the current permit) that would trigger the need for a permit modification.

#### **D.1.4 C-746-U Sanitary Landfill Permit**

**Scope:** Contained landfill for plant wastes

**Issuer:** Kentucky Division of Waste Management (KDWM)

**Date Issued:** November 4, 1996

**Expiration Date:** November 4, 2006

**Permit No.:** 073-00045

**Signatory:** DOE

- Issues:**
1. The C-746-U Operating Plan may need to be modified at plant turnover due to the increased fill rates. The landfill was sized for major activities, such as plant closure, so there should be no other major operating impacts.
  1. USEC is now using landfill services provided by an off-site vendor (LWD Inc., in Calvert City, Kentucky) for sanitary-type wastes. Landfill packages will have to be prepared and approved by KDWM prior to C-746-U accepting these waste streams, or a contract must be established with an off-site vendor for continued disposal.
  2. Original NEPA EA for the C-746-U Landfill did not include accepting plant wastes from enrichment operations. In the event that the operating plan was changed to accept these wastes, additional NEPA reviews/documentation may be required.

**Transfer/Time Requirements:** No transfer requirements. However, allow 4 months if letter notification is needed to modify the Operating Plan due to change in fill rates.

**Actions Required:** Evaluate Operating Plan and projected fill rates. If needed, provide letter notification to the state concerning the increase in fill rates.

#### **D.1.5 Air Operating Permit**

The air operating permits for cylinder painting (Permit No. S98044) and Vortec Vitrification (Permit No. S96-239) would not require any modifications during the turnover of GDP. KDAQ considers the enrichment plant and its ancillary facilities operated by USEC a Title V air source. USEC now

operates air emission sources under the two permits listed below. USEC has completed a Title V Air Permit Application with the State of Kentucky, but a permit has not been issued. No timetable for issuance of the Title V Permit is now available.

**Scope:** Allows for emissions to air due to enrichment plant activities

**Issuer:** KDAQ

**Date Issued:** F97-004 issued September 26, 1997  
S96-036 Rev. 1 issued November 26, 1997

**Expiration Date:** F97-004 expires September 26, 2002  
S96036 Rev. 1 expires February 23, 2000

**Permit Nos.:** F97-004 New Boiler/Heat Exchanger C-600 Boiler No. 1  
S96-036 Rev. 1 Enrichment Operations—Existing boilers, C-310 Stack, and C-410-K Fluorine Facility

**Signatory:** USEC

**Issues:**

1. DOE and USEC must work closely to determine source operations and need for continued operations on a case-by-case basis.
2. Alternative site missions once enrichment operations cease may require additional permits or additional modifications.

**Transfer/Time Requirements:** Allow 6 months to prepare, submit, and obtain permit modifications to rename the permittee as DOE on each of USEC's permits so that each of the existing permits are transferred and continued operations of key equipment can continue. An administrative update will have to be submitted to KDAQ to continue the Title V Permit application if a permit has not been issued by KDAQ by the time of GDP transfer to DOE.

**Actions Required:**

1. All air emission sources should be evaluated and either (1) a new application submitted to the KDAQ to transfer appropriate permits (i.e., units that will continue to operate) back to DOE or (2) terminate permits for sources that will not be used due to cessation of enrichment operations.
2. If a Title V Permit has not been issued by KDAQ, an administrative update must be generated and submitted.

## **D.2 DOE Regulatory Agreements**

The following environmental agreements at PGDP were reviewed relative to potential impacts by GDP turnover. The results of this review are summarized in association with each agreement.

### **D.2.1 Toxicity Characteristic Leaching Procedure (TCLP) FFCA**

**Scope:** Requires testing of approximately 16,000 containers to determine whether items are RCRA hazardous wastes according to TCLP testing.

**Issuer:** EPA  
**Date Issued:** Effective March 1992  
**Expiration Date:** December 31, 2000  
**Signatory:** DOE  
**Transfer/Time Requirements:** None. USEC's waste is characterized as part of being a 90-day hazardous waste generator.  
**Issues:** This FFCA will need to be continued without regard to the status of the lease with USEC.  
**Actions Required:** Not impacted by GDP turnover.

#### **D.2.2 TSCA FFCA**

**Scope:** A management plan, implemented through EPA, that establishes a protocol for managing PCB material at GDP  
**Issuer:** EPA  
**Date Issued:** February 20, 1992  
**Expiration Date:** Not applicable  
**Signatory:** DOE  
**Issues:**

1. Shutdown of enrichment operations will cause PCB-containing equipment to be taken out of service, triggering specific requirements (e.g., disposal of non-radioactive PCB waste within 1 year) under this FFCA.
2. Negotiated schedules and commitments cannot be met without additional funding for PGDP.
3. Some commitments may need to be revisited due to overall plant priorities (e.g., removal of gaskets now being left in place will be initiated upon commencement of decommissioning).
4. DOE may need to obtain permits under TSCA to process and store PCB material arising from the turnover of leased facilities.

**Transfer/Time Requirements:** No transfer requirements exist. However, within 3 months of the notification of turnover, FFCA should be evaluated and the determination made either to pursue and obtain adequate funding to support FFCA activities under D&D, or to initiate renegotiations with EPA.

**Actions Required:**

1. Formally notify EPA of leased facility turnover date and decision to cease enrichment activities at PGDP.
2. Evaluate agreement and the TSCA PCB Management Plan for commitments, schedules, and associated funding requirements.

3. Either obtain funding to meet current agreement or pursue renegotiations with EPA.
4. In conjunction with the survey discussed in Sect. 4.1, identify PCB materials that will require processing/storage and prepare/submit permit application(s) to accommodate this processing/storage.

**D.2.3 Agreed Order/Site Treatment and Disposal Plan (STP)**

**Scope:** Regulates the treatment and storage of LDR mixed wastes generated by DOE at PGDP

**Issuer:** KDWM

**Date Issued:** March 1999 (revised annually)

**Expiration Date:** March 2000

**Documents No.:** BJC/PAD-94 (formerly KY-EM147 Rev. 3)

**Signatory:** DOE

**Issues:** USEC now has an agreed order based on data submitted by USEC to KDWM. Therefore, upon termination of the lease, the information in the USEC order will have to be integrated into the DOE order or handled in one of the following ways:

1. the DOE order and the USEC order will need to be integrated (USEC successfully negotiates with DOE to accept responsibility for USEC's mixed waste);
2. the USEC order will need to be terminated (all of USEC's mixed waste have been treated and disposed of or meet the LDR requirements for storage); or
3. USEC will fulfill its order (all of USEC's mixed waste will be managed in accordance with the agreed order issued to USEC).

**Transfer/Time Requirements:**

A modification to the DOE Site Treatment Plan may or may not be required, depending on the waste streams identified during the turnover. If a modification is required, 180 days will be required to prepare and submit the revision.

- Actions Required:**
1. Evaluate both the DOE and USEC agreed orders.
  2. Modify/terminate through negotiations with USEC and/or KDWM as appropriate.
  3. Evaluate the USEC waste streams to ensure that they meet LDR requirements under RCRA.
  4. Any mixed waste that does not meet the LDR requirements and is not identified on the current DOE Site Treatment Plan will require a modification to the plan.

**D.2.4 Federal Facilities Agreement (FFA)**

**Scope:** FFA is required because PGDP is on the National Priorities List (NPL). The original Administrative Consent Order (ACO) was issued in 1988. FFA replaced ACO as the governing document for remediation at the site. FFA directs the comprehensive

remediation of PGDP. It contains requirements for (1) implementing investigations of known or potential releases of hazardous substances, pollutants or contaminants; (2) selection and implementation of appropriate remedial and removal actions; and (3) establishing priorities for action and development of schedules, consistent with the established priorities, goals, and objectives of this Agreement.

**Issuer:** EPA and Kentucky Natural Resources and Environmental Protection Cabinet

**Date Issued:** November 4, 1997

**Expiration Date:** Completion of remedial activities

**Permit No.:** None

**Signatory:** DOE

**Issues:**

1. The agreement will need to be modified as notification to incorporate D&D schedules associated with turnover of leased facilities from USEC.
2. To avoid confusion, DOE should confirm the understanding concerning waste and depleted UF<sub>6</sub> generated after the 1998 transition date of USEC to a private company. Before this date, all depleted UF<sub>6</sub> remains in DOE's inventory to be addressed as part of the Depleted Uranium Hexafluoride Programmatic Environmental Impact Statement issued in 1999.

**Transfer/Time Requirements:** No transfer requirements. However, FFA should be modified to incorporate post-turnover D&D schedules. This process should be initiated 1 year before the turnover of leased facilities.

**Actions Required:**

1. Evaluated the alternative missions efforts to identify the facility to be addressed by D&D.
2. Modify/develop D&D schedules in FFA as appropriate.

### **D.3 PORTS Permits**

The following environmental permits at PORTS were reviewed relative to potential impacts by GDP turnover. The results of this review are summarized in association with each permit.

#### **D.3.1 National Pollutant Discharge Elimination System (NPDES)**

**Scope:** Allows for discharge of aqueous effluents to waters of the state.

**Issuer:** Ohio Environmental Protection Agency (OEPA)

**Date Issued:** August 8, 1995

**Effective Date:** September 1, 1995

**Expiration Date:** March 31, 1999 (Renewal application submitted; no response from the State except to continue to operate under the terms of this permit.)

**Permit No.:** 0IO00000\*ED

**Signator:** DOE

**Issues:**

1. Permit is only for DOE outfalls.
2. Alternate effluent limitations granted for total suspended solids (TSS) following precipitation events.
3. One new outfall has been added for X-622T.
4. Alternate missions may require additional permits or additional modifications.

**Transfer/Time Requirements:** No transfer required.

**Actions Required:**

1. Evaluate NPDES permit.
2. Prepare and submit permit modification(s) to remove unnecessary parameters.

#### **D.3.2 NPDES**

**Scope:** Allows for discharge of aqueous effluents to waters of the state.

**Issuer:** OEPA

**Date Issued:** August 8, 1995

**Effective Date:** September 1, 1995

**Expiration Date:** March 31, 1999—USEC has a new permit that will become effective March 1, 2000.

**Permit No.:** 0IO00003\*AD

**Signator:** USEC

**Issues:**

1. Permit is only for USEC outfalls.
2. Alternate effluent limitations granted for TSS following precipitation events.
3. Alternate missions may require additional permits or additional modifications.

**Transfer/Time Requirements:** Transfer to DOE required upon return of leased facilities.

**Actions Required:**

1. Evaluate NPDES permit.
2. Prepare and submit permit modification(s) to remove unnecessary parameters.

#### **D.3.3 RCRA Hazardous Waste Management Permit Part B**

**Scope:** Allows for storage of hazardous waste and mixed waste at X-7725 and X-326.

**Issuer:** OEPA

**Date Issued:** August 21, 1995

**Expiration Date:** August 21, 2000 (permit renewal submitted to OEPA on February 17, 2000)

**Permit No.:** 04-57-0680

**Signator:** DOE/LMES

**Issues:**

1. USEC will not be a signator to the permit. Upon turnover of leased facilities, a permit modification will be required if (1) additional waste streams are generated, or (2) increased storage is needed.
2. Wastes generated by USEC are stored in DOE permitted areas (i.e., X-7725 and X-326).

**Transfer/Time Requirements:** No transfer required. Allow 1 year to prepare, submit, and obtain permit modification if needed (see Issue No. 1 above).

**Actions Required:**

1. Evaluate impact of turnover of leased facilities on permit (i.e., waste streams, storage, treatment, etc.).
2. Prepare and submit permit modification if evaluation indicates that it is needed.

#### **D.3.4 Air Operating Permit**

**Scope:** Allows for emissions to air from plant

**Issuer:** Ohio EPA

**Date Issued:** Various

**Expiration Date:** Various

**Permit No.:** DOE has one hundred registered sources and five permits to operate. USEC has submitted Title V Air Permit Application to the State. No action on this permit to date.

**Signator:** DOE. Note: Although DOE is signator for the permit, responsibilities for sources have been divided (see Exhibit C, Appendix A of the lease). New sources under USEC responsibility will be permitted by USEC.

**Issues:**

1. DOE and USEC must continue to work closely to determine source operations and responsibilities on a case-by-case basis.
2. Alternative missions may require additional permits or additional modifications.

**Transfer/Time Requirements:** Allow 1 year to prepare, submit, and obtain permit terminations and/or transfers.

**Action Required:** Upon turnover of leased facilities, all sources should be identified and evaluated and either (1) a new application be submitted to OEPA to transfer appropriate permits (i.e., new units that will continue to operate) back to DOE or (2) terminate permits for sources that will not be used because of lease termination.

#### **D.4 PORTS Agreements**

The following environmental agreements at PORTS were reviewed relative to potential impacts by GDP turnover. The results of this review are summarized in association with each agreement.

##### **D.4.1 Director's Findings and Orders (DFO) —STP**

**Scope:** Establishes requirements for mixed waste management and disposal by DOE based on DOE's STP.

**Issuer:** OEPA

**Date Issued:** October 4, 1995

**Expiration Date:** Expires when all mixed wastes subject to the order have been treated.

**Signator:** Not applicable

**Issues:**

1. Incorporation of USEC STP responsibilities into DOE's DFO may be appropriate. Refer to Sect. C.4.2.
2. The volume of materials/equipment that become waste and potentially mixed waste may impact the waste management capabilities and schedule in DOE's STP.

**Transfer/Time Requirements:** None. Refer to Sect. C.4.2.

**Actions Required:**

1. In conjunction with the material/equipment survey task, evaluate the impacts of anticipated additional mixed wastes generated as a result of leased facility turnover on STP and DFO.
2. Modify DFO as appropriate.

##### **D.4.2 Director's Findings and Orders (DFO)—Site Treatment and Disposal Plan**

**Scope:** The scope is twofold: (1) establishes requirements for RCRA hazardous and mixed waste management and disposal by USEC based on USEC's Site Treatment and Disposal Plan, and (2) authorizes USEC to operate a pretransport staging area for RCRA hazardous waste and RCRA mixed waste.

**Issuer:** OEPA

**Date Issued:** October 5, 1995

**Expiration Date:** December 31, 2000, or expires when all of USEC's backlog mixed wastes that have been identified for treatment have been treated.

**Signator:** USEC

**Issue:** These DFOs are based on STP submitted by USEC for USEC's backlogged mixed wastes with identified treatment. Therefore, upon termination of the lease, either (1) DFO for DOE or DFO for USEC will need to be integrated (i.e., USEC successfully negotiates with DOE to accept responsibility for USEC's mixed wastes), (2) the USEC DFO will need to be terminated (i.e., all USEC's mixed wastes have been disposed of), or (3) USEC will fulfill its DFO (i.e., all USEC mixed wastes will be managed by USEC in accordance with the USEC DFO).

**Transfer/Time Requirements:** At notification, DOE should evaluate whether USEC has fulfilled the USEC STP requirements.

**Actions Required:**

1. Evaluate DOE and USEC DFOs.
2. Modify/terminate the USEC DFO through negotiations with USEC and/or the State of Ohio, as appropriate.

#### D.4.3 TSCA FFCA

**Scope:** Establishes a plan for managing PCB materials at GDP.

**Issuer:** EPA

**Date Issued:** February 20, 1992

**Expiration Date:** Not applicable

**Signator:** DOE

**Issues:**

1. Turnover of leased facilities will cause PCB-containing equipment to be taken out of service, triggering specific requirements (e.g., disposal of nonradioactive PCB waste within 1 year) under this FFCA.
2. Negotiated schedules and commitments cannot be met without additional funding for PORTS.
3. Some commitments may need to "revisited" due to overall plant priorities (e.g., removal of gaskets now being left in place will be initiated upon decommissioning).

**Transfer/Time Requirements:** No transfer requirements. However, within 3 months of notification, FFCA should be evaluated and the determination made to either pursue and obtain adequate funding to support FFCA or initiate renegotiations with EPA.

**Actions Required:**

1. Formally notify EPA of leased facility turnover date.
2. Evaluate agreement for commitments, schedules, and associated funding requirements.
3. Either obtain funding to meet current agreement or pursue renegotiations with EPA.

#### **D.4.4 Consent Decree**

**Scope:** Defines Environmental Restoration activities with the State of Ohio

**Issuer:** OEPA

**Date Issued:** August 29, 1989

**Expiration Date:** August 29, 1994, or when agreed-upon actions are complete.

**Signator:** DOE

**Issues:** None.

**Transfer/Time**

**Requirements:** No transfer issues. Allow 1 year to negotiate and obtain any modifications needed due to impacts from turnover of leased facilities.

**Action Required:** Evaluate agreement for impacts (e.g., D&D projects and project schedules) due to the turnover of leased facilities. Modify if needed.

#### **D.4.5 Administrative Consent Order**

**Scope:** Defines environmental restoration activities with EPA

**Issuer:** EPA

**Date Issued:** September 1989 (amended in 1994–1997)

**Expiration Date:** When agreed-upon actions are completed.

**Signator:** DOE

**Issues:** None.

**Transfer/Time**

**Requirements:** No transfer issues. Allow 1 year to negotiate and obtain any modifications needed due to impacts from cessation of enrichment operations.

**Action Required:** Evaluate agreement for impacts (e.g., D&D projects and project schedules) due to plant closure. Modify if needed.

**APPENDIX E**

**D&D FUND BUILDING/STRUCTURE LIST—PGDP AND PORTS**

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<b>D&amp;D Fund Building/Structure List - Paducah</b>						
<b>FY 2000 Revision</b>						
<b>BLDG. #</b>	<b>DESCRIPTION</b>	<b>GROSS FT2</b>	<b>D&amp;D</b>	<b>REIND.</b>	<b>INFRASTR</b>	<b>DISPOSITION</b>
C-100	Administration Bldg.	67,516	Y			D&D-Auxiliary
C-100 T04	Office Trailer	1,440	Y			D&D-Trailer
C-100 T05	Office Trailer	1,440	Y			D&D-Trailer
C-100 T06	Office Trailer	1,440	Y			D&D-Trailer
C-100 T07	Temp. Office	244	Y			D&D-Trailer
C-100 T08	FOCI Office & Changehouse	720	Y			D&D-Trailer
C-100-A	Office Trailer	1,440	Y			D&D-Trailer
C-101	Cafeteria	18,326	Y			D&D-Auxiliary
C-102	Hospital	11,666	Y			D&D-Auxiliary
C-102 T01	Office Trailer	1,440	Y			D&D-Trailer
C-102 T02	Office Trailer	1,440	Y			D&D-Trailer
C-102 T03	Office Trailer	1,440	Y			D&D-Trailer
C-102 T04	Office Trailer	1,440	Y			D&D-Trailer
C-102 T05	Office Trailer	1,440	Y			D&D-Trailer
C-102 T06	Office Trailer	1,440	Y			D&D-Trailer
C-102 T07	Temp. Office	1,960	Y			D&D-Trailer
C-102 T08	Modular Office	64	Y			D&D-Trailer
C-102 T09	Temp. Office	144	Y			D&D-Trailer
C-103	DOE Site Office	7,500	Y			D&D-Auxiliary
C-200	Guard and Fire Headquarters	19,940	Y			D&D-Auxiliary
C-200-A	Security Patrol & Fire Training	1,152	Y			D&D-Auxiliary
C-201	Emergency Equip. Strg. Bldg.	864	Y			D&D-Auxiliary
C-201-A	Emerg. Equip. Storage Bldg.	224	Y			D&D-Auxiliary
C-201-B	Emerg. Equip. Storage Bldg.	224	Y			D&D-Auxiliary
C-201-C	Emerg. Equip. Storage Bldg.	224	Y			D&D-Auxiliary
C-201-D	Emerg. Equip. Storage Bldg.	224	Y			D&D-Auxiliary
C-202	Guard Training Bldg.	3,446	Y			D&D-Auxiliary
C-203	Emergency Vehicle Shelter	1,800	Y			D&D-Auxiliary
C-204	Disintegrator Bldg.	300	Y			D&D-Contaminated Auxiliary
C-205	Respirator Issue Facility	3,600	Y			D&D-Auxiliary
C-206-A	Storage Trailer	224	Y			D&D-Trailer
C-206-B	Smoke Training Fac.	672	Y			D&D-Auxiliary
C-207	Fire Training Facility	900	Y			D&D-Auxiliary
C-212	Office Building	5,186	Y			D&D-Auxiliary
C-212-A	Main Guard Post (Gate 15)	280	Y			D&D-Trailer
C-212-T01	HP Office	96	Y			D&D-Trailer
C-215	Portals 18 and 19	1,045	Y			D&D-Trailer
C-216	Post 47	500	Y			D&D-Trailer
C-217	Post 43	108	Y			D&D-Trailer
C-300	Central Control Bldg.	16,022	Y			D&D-Auxiliary
C-301	Fire Training Bldg.(Storage Fac.)	2,802	Y			D&D-Contaminated Auxiliary
C-302	Operations Div. Data Center	7,366	Y			D&D-Auxiliary
C-302-T01	System Engineering	192	Y			D&D-Trailer
C-303	Supv. Control & Data Acq. Sys. Bldg.	2,109	Y			D&D-Auxiliary
C-304	Training & Cascade Ofc. Bldg.	8,000			Y	Infrastructure
C-304-T01	System Double Wide Trailer	880	Y			D&D-Trailer
C-310	Purge & Product Bldg.	112,240	Y			D&D-Process
C-310-A	Product Withdrawal Building	3,276	Y			D&D-Contaminated Auxiliary

<b>D&amp;D Fund Building/Structure List – Paducah</b>						
<b>FY 2000 Revision</b>						
<b>BLDG. #</b>	<b>DESCRIPTION</b>	<b>GROSS FT2</b>	<b>D&amp;D</b>	<b>REIND.</b>	<b>INFRASTR</b>	<b>DISPOSITION</b>
C-310-B	Office	96	Y			D&D-Contaminated Auxiliary
C-310-C	Office	160	Y			D&D-Contaminated Auxiliary
C-315	Surge & Waste Bldg.	16,040	Y			D&D-Contaminated Auxiliary
C-320	Communication Bldg.	1,116	Y			D&D-Auxiliary
C-320-A	Temp. Storage	160	Y			D&D-Auxiliary
C-331	Process Bldg.	1,029,120	Y			D&D-Process
C-331-T01	HP Office	160	Y			D&D-Contaminated Auxiliary
C-333	Process Bldg.	2,130,120	Y			D&D-Process
C-333-A	Feed Vaporization Facility	8,305	Y			D&D-Contaminated Auxiliary
C-333-T05	RARP Project Trailer	1,344	Y			D&D-Trailer
C-333-T06	HP Office	96	Y			D&D-Trailer
C-333-T07	HP Office	96	Y			D&D-Trailer
C-335	Process Bldg.	1,029,120	Y			D&D-Process
C-337	Process Bldg.	2,130,120	Y			D&D-Process
C-337-A	Feed Vaporization Facility	8,556	Y			D&D-Contaminated Auxiliary
C-337-T01	HP Trailer	96	Y			D&D-Contaminated Auxiliary
C-337-T02	HP Trailer	96	Y			D&D-Contaminated Auxiliary
C-340-A	Powder Bldg.	42,020	Y			D&D-Contaminated Auxiliary
C-340-B	Metals Bldg.	17,920	Y			D&D-Contaminated Auxiliary
C-340-C	Slag Bldg.	4,400	Y			D&D-Contaminated Auxiliary
C-340-D	Magnesium Storage Bldg.	3,888	Y			D&D-Contaminated Auxiliary
C-340-E	Emergency Power for Critical Alarms	100	Y			D&D-Contaminated Auxiliary
C-342	Ammonia Dissociator & Strg. Fac.	1,242	Y			D&D-Contaminated Auxiliary
C-342-A	Ammonia Dissociator Addition	1,224	Y			D&D-Contaminated Auxiliary
C-342-B	Tank Shelter	2,304	Y			D&D-Auxiliary
C-350	Drying Agent Storage Bldg.	920	Y			D&D-Contaminated Auxiliary
C-360	Toll Transfer & Sampling Facility	17,800	Y			D&D-Contaminated Auxiliary
C-360-T01	HP Office	96	Y			D&D-Contaminated Auxiliary
C-360-T02	HP Storage	36	Y			D&D-Contaminated Auxiliary
C-370-E	Water Quality Monitoring Station	64	Y			D&D-Auxiliary
C-370-W	Water Quality Monitoring Station	64	Y			D&D-Auxiliary
C-400	Cleaning Bldg.	116,140	Y			D&D-Contaminated Auxiliary

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<b>BLDG. #</b>	<b>DESCRIPTION</b>	<b>GROSS FT2</b>	<b>D&amp;D</b>	<b>REIND.</b>	<b>INFRASTR</b>	<b>DISPOSITION</b>
C-400-A	Emergency Power for Critical Alarms	100	Y			D&D-Contaminated Auxiliary
C-400-T01	HP Office	160	Y			D&D-Contaminated Auxiliary
C-400-T02	HP Office	160	Y			D&D-Contaminated Auxiliary
C-402	Lime House	1,742	Y			D&D-Contaminated Auxiliary
C-405	Contaminated Items Incinerator	1,010	Y			D&D-Contaminated Auxiliary
C-408	50-Ton Truck Scale	130	Y			D&D-Auxiliary
C-409	Stabilization Bldg.	26,797	Y			D&D-Contaminated Auxiliary
C-409-A	Storage Trailer	160	Y			D&D-Trailer
C-409-B	Storage Trailer	160	Y			D&D-Trailer
C-409-C	Storage Trailer	160	Y			D&D-Trailer
C-409-D	Storage Trailer	160	Y			D&D-Trailer
C-409-E	Storage Trailer	160	Y			D&D-Trailer
C-410	Feed Plant	122,944	Y			D&D-Contaminated Auxiliary
C-410-C	Hydrofluoric Acid Neutralization Fac.	1,088	Y			D&D-Contaminated Auxiliary
C-410-D	Fluorine Storage Bldg.	1,526	Y			D&D-Contaminated Auxiliary
C-410-F	Hydrofluoric Acid Storage Bldg. (N)	1,222	Y			D&D-Contaminated Auxiliary
C-410-G	Hydrofluoric Acid Storage Bldg. (Ctr.)	1,222	Y			D&D-Contaminated Auxiliary
C-410-H	Hydrofluoric Acid Storage Bldg. (S)	1,222	Y			D&D-Contaminated Auxiliary
C-410-I	Ash Receiver Shelter	2,000	Y			D&D-Contaminated Auxiliary
C-410-J	Hydrofluoric Acid Storage Bldg. (E)	2,024	Y			D&D-Contaminated Auxiliary
C-410-K	Fluorine Building	1,500	Y			D&D-Contaminated Auxiliary
C-411	Cell Maintenance Bldg.	4,260	Y			D&D-Contaminated Auxiliary
C-415	Feed Plant Storage Bldg.	3,666	Y			D&D-Contaminated Auxiliary
C-416	Equip. Cleaning Facility	2,826	Y			D&D-Contaminated Auxiliary
C-416-T01	Storage Trailer	160	Y			D&D-Trailer
C-420	Greensalt Plant	46,756	Y			D&D-Contaminated Auxiliary
C-531-1	Switch House	31,400			Y	Infrastructure
C-531-3A	Fire Valve House No. 1	144	Y			D&D-Auxiliary
C-531-3B	Fire Valve House No. 2	144	Y			D&D-Auxiliary
C-532	Relay House	7,784	Y			D&D-Powerhouse
C-533-1	Switch House	37,360	Y			D&D-Powerhouse
C-533-3A	Fire Valve House No. 1	144	Y			D&D-Auxiliary
C-533-3B	Fire Valve House No. 2	144	Y			D&D-Auxiliary
C-533-3C	Fire Valve House No. 3	144	Y			D&D-Auxiliary
C-533-3D	Fire Valve House No. 4	144	Y			D&D-Auxiliary

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BLDG. #	DESCRIPTION	GROSS FT2	D&D	REIND.	INFRASTR	DISPOSITION
C-535-1	Switch House	28,000	Y			D&D-Powerhouse
C-535-3A	Fire Valve House No. 1	144	Y			D&D-Auxiliary
C-535-3B	Fire Valve House No. 2	144	Y			D&D-Auxiliary
C-535-4	Test Shop	480	Y			D&D-Auxiliary
C-536	Relay House	7,784	Y			D&D-Powerhouse
C-537-1	Switch House	42,140	Y			D&D-Powerhouse
C-537-3A	Fire Valve House No. 1	144	Y			D&D-Auxiliary
C-537-3B	Fire Valve House No. 2	144	Y			D&D-Auxiliary
C-537-3C	Fire Valve House No. 3	144	Y			D&D-Auxiliary
C-537-3D	Fire Valve House No. 4	144	Y			D&D-Auxiliary
C-537-4	Test Shop	480	Y			D&D-Auxiliary
C-540-A	Oil Pump House	312	Y			D&D-Auxiliary
C-541-A	Oil Pump House	312	Y			D&D-Auxiliary
C-600	Steam Plant	47,424	Y			D&D-Powerhouse
C-601	Nitrogen Generator Bldg. Addition	2,250	Y			D&D-Auxiliary
C-601-C	Steam Pnt. Fuel Oil Pump House	148	Y			D&D-Auxiliary
C-603-A	Nitrogen Manifold Bldg.	72	Y			D&D-Auxiliary
C-603-H	Nitrogen Generator-Control House	128	Y			D&D-Auxiliary
C-604	Utilities Maintenance Bldg.	2,400	Y			D&D-Auxiliary
C-604-A	Utilities Storage Bldg.	290	Y			D&D-Auxiliary
C-605	Substation Bldg.	1,200	Y			D&D-Auxiliary
C-606	Coal Crusher Bldg.	1,470	Y			D&D-Auxiliary
C-607	Emer. Air Compressor Gen. Bldg.	2,000	Y			D&D-Auxiliary
C-611-A	Bldg. and Shop Storage	504			Y	Infrastructure
C-611-A1	Activated Carbon Storage	1,600			Y	Infrastructure
C-611-B	Head House	1,215			Y	Infrastructure
C-611-B1	Polymer Feed Sys. Enclosure	285			Y	Infrastructure
C-611-F2	Chemical Feed Bldg. for C-611-F1	589			Y	Infrastructure
C-611-F3	Activated Carbon Feed Bldg.	144			Y	Infrastructure
C-611-H	Filter Bldg. & Pump Station	13,067			Y	Infrastructure
C-611-P	Pump House	902			Y	Infrastructure
C-611-Q	36" Raw Water line Booster Station	392			Y	Infrastructure
C-611-S	Corrosion Inhibitor Bldg.	1,120			Y	Infrastructure
C-611-T	Booster Pump Station (Water Plant)	640			Y	Infrastructure
C-611-T01	Temp. Office	670			Y	Infrastructure
C-612	NW Plume Pump & Treat Fac.	4,480			Y	Infrastructure
C-612-T01	Trailer	600	Y			D&D-Trailer
C-612-T02	Trailer	600	Y			D&D-Trailer
C-612-T03	Storage/Changehouse	600	Y			D&D-Trailer
C-612-T04	Lab	120	Y			D&D-Trailer
C-615	Sewage Disposal Plant	806			Y	Infrastructure
C-615-C	Control Bldg.	1,308			Y	Infrastructure
C-615-G	Sewage Lift Station	94	Y			D&D-Auxiliary
C-615-H	Sewage Lift Station	96	Y			D&D-Auxiliary
C-615-H1	Sewage Lift Station	94	Y			D&D-Auxiliary
C-615-H2	Sewage Lift Station	94	Y			D&D-Auxiliary

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<b>BLDG. #</b>	<b>DESCRIPTION</b>	<b>GROSS FT2</b>	<b>D&amp;D</b>	<b>REIND.</b>	<b>INFRASTR</b>	<b>DISPOSITION</b>
C-615-J	Chromate Lift Station (Abandoned)	160	Y			D&D-Auxiliary
C-615-K	Chromate Lift Station (Abandoned)	160	Y			D&D-Auxiliary
C-615-L	Oil Control Monitoring Station	144	Y			D&D-Auxiliary
C-615-O	Oil Control Building	144	Y			D&D-Auxiliary
C-616-A	Chemical Feed Bldg.	2,000	Y			D&D-Auxiliary
C-616-C	Lift Station	324	Y			D&D-Auxiliary
C-616-D	Sludge Vault and Valve Pit	165	Y			D&D-Auxiliary
C-616-K	Service Bldg.	420	Y			D&D-Auxiliary
C-616-L	Effluent Control Vault	96	Y			D&D-Auxiliary
C-616-P	Sludge Vault & Valve Pit	165	Y			D&D-Auxiliary
C-617-A	Effluent Control Station	256	Y			D&D-Auxiliary
C-620	Air Compressor Room	10,000	Y			D&D-Contaminated Auxiliary
C-631-1	Pump House	9,700	Y			D&D-Auxiliary
C-631-10	Asbestos Crew Storage	192	Y			D&D-Trailer
C-631-11	PCB Maintenance Trailer	720	Y			D&D-Trailer
C-631-12	Asbestos Crew Storage	288	Y			D&D-Trailer
C-631-13	RCW Equipment Storage	160	Y			D&D-Trailer
C-631-14	RCW Supervisor's Office	320	Y			D&D-Trailer
C-631-15	RCW Equipment Storage	192	Y			D&D-Trailer
C-631-2	Cooling Tower	15,248	Y			D&D-Cooling Tower
C-631-3	Pump House	1,196	Y			D&D-Auxiliary
C-631-4	Blending Pump House	1,540	Y		**	D&D-Auxiliary
C-631-5	Blending Cooling Tower (West)	3,024	Y			D&D-Cooling Tower
C-631-6	Blending Cooling Tower (East)	1,512	Y			D&D-Cooling Tower
C-631-7	Maintenance Shop	520	Y			D&D-Auxiliary
C-631-8	Change House	168	Y			D&D-Trailer
C-631-9	Asbestos Crew Breakroom	256	Y			D&D-Trailer
C-633-1	Pump House	10,245	Y			D&D-Auxiliary
C-633-2A	Cooling Tower (South)	16,058	Y			D&D-Cooling Tower
C-633-2B	Cooling Tower (North)	16,058	Y			D&D-Cooling Tower
C-633-3	Blending Pump House	1,984	Y			D&D-Auxiliary
C-633-4	Blending Cooling Tower (North)	4,536	Y			D&D-Cooling Tower
C-633-5	Blending Cooling Tower (South)	4,536	Y			D&D-Cooling Tower
C-633-6	Sand Filter Building	260	Y			D&D-Auxiliary
C-635-1	Pump House and Piping	8,505	Y			D&D-Auxiliary
C-635-2	Cooling Tower	15,248	Y			D&D-Cooling Tower
C-635-3	Blending Pump House	1,984	Y			D&D-Auxiliary
C-635-4	Blending Cooling Tower (North)	2,520	Y			D&D-Cooling Tower
C-635-5	Blending Cooling Tower (South)	3,024	Y			D&D-Cooling Tower
C-635-6	Process Wst. Heat Utilization House	2,556	Y			D&D-Auxiliary
C-637-1	Pump House	10,245	Y			D&D-Auxiliary
C-637-2A	Cooling Tower (South)	22,011	Y			D&D-Cooling Tower
C-637-2B	Cooling Tower (North)	22,011	Y			D&D-Cooling Tower
C-637-3	Blending Pump House	2,048	Y			D&D-Auxiliary

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<b>BLDG. #</b>	<b>DESCRIPTION</b>	<b>GROSS FT2</b>	<b>D&amp;D</b>	<b>REIND.</b>	<b>INFRASTR</b>	<b>DISPOSITION</b>
C-637-4	Blending Cooling Tower (North)	3,528	Y			D&D-Cooling Tower
C-637-5	Blending Cooling Tower (South)	3,528	Y			D&D-Cooling Tower
C-637-6	Sand Filter Building	260	Y			D&D-Auxiliary
C-709	Lab Addition		Y			D&D-Contaminated Auxiliary
C-710	Technical Services Bldg.	84,333	Y			D&D-Contaminated Auxiliary
C-710-A	Gas Cylinder Strg. Bldg.	400	Y			D&D-Auxiliary
C-710-B	Storage Facility	224	Y			D&D-Auxiliary
C-711	Gas Manifold	962	Y			D&D-Auxiliary
C-720	Maint. and Storage Bldg.	299,944	Y			D&D-Contaminated Auxiliary
C-720-A	Compressor Shop Addition	1,600	Y			D&D-Contaminated Auxiliary
C-720-B	Machine Shop Addition	1,700	Y			D&D-Contaminated Auxiliary
C-720-C	Converter Shop Addition	28,134	Y			D&D-Contaminated Auxiliary
C-720-C1	Barrier Storage	5,120	Y			D&D-Contaminated Auxiliary
C-720-D	Transformer Bldg.	400	Y			D&D-Auxiliary
C-720-E	Change House Addition	3,467	Y			D&D-Trailer
C-720-G	PEM Receiving Bldg.	10,800	Y			D&D-Auxiliary
C-720-H	Warehouse	2,400	Y			D&D-Auxiliary
C-720-J	Air Lock	920	Y			D&D-Auxiliary
C-720-K	Instrument Shop Addition	1,520	Y			D&D-Auxiliary
C-720-M	Computer Maintenance Trailer	1,440	Y			D&D-Trailer
C-720-M T01	Comp. Maint. Storage Trailer	160	Y			D&D-Trailer
C-720-M T02	Comp. Maint. Storage Trailer	160	Y			D&D-Trailer
C-720-N	Railroad Scale House	192	Y			D&D-Auxiliary
C-720-P	Instrument Maintenance Trailer	500	Y			D&D-Trailer
C-720-Q	Instr. Maint. Storage Trailer	256	Y			D&D-Trailer
C-720-R	Instrument Training Trailer	250	Y			D&D-Trailer
C-720-S	MSA Mask Repair Trailer	250	Y			D&D-Trailer
C-720-T	Electrical Maint. Trailer	264	Y			D&D-Trailer
C-721	Gas Manifold Storage	962	Y			D&D-Auxiliary
C-724-A	Carpenter Shop Annex	3,900	Y			D&D-Auxiliary
C-724-B	Carpenter Shop	10,215	Y			D&D-Auxiliary
C-724-C	Paint Shop	100	Y			D&D-Auxiliary
C-724-D	Lumber Storage Building	2,880	Y			D&D-Auxiliary
C-725	Paint Shop	410	Y			D&D-Auxiliary
C-726	Sandblast Building	2,019	Y			D&D-Auxiliary
C-727	Heat Treating Facility	4,428	Y			D&D-Contaminated Auxiliary
C-728	Motor Cleaning Facility	1,597	Y			D&D-Contaminated Auxiliary
C-729	Acetylene Building	430	Y			D&D-Auxiliary
C-730	Maintenance Services Bldg.	1,057	Y			D&D-Auxiliary

<b>D&amp;D Fund Building/Structure List - Paducah</b>						
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<b>BLDG. #</b>	<b>DESCRIPTION</b>	<b>GROSS FT<sup>2</sup></b>	<b>D&amp;D</b>	<b>REIND.</b>	<b>INFRASTR</b>	<b>DISPOSITION</b>
C-730-T01	Trailer	720	Y			D&D-Trailer
C-730-T02	Trailer	700	Y			D&D-Trailer
C-730-T05	Trailer	1,340	Y			D&D-Trailer
C-730-T08	Trailer	220	Y			D&D-Trailer
C-731	RR Repair Equip. Storage Bldg.	1,280	Y			D&D-Auxiliary
C-732	Maint. Materials Strg. Bldg.	1,680	Y			D&D-Auxiliary
C-733	Waste Oil & Chem. Strg. Facility	4,224	Y			D&D-Auxiliary
C-740-A	Semitrailer Unloading Facility	1,000	Y			D&D-Auxiliary
C-740-B	Oil Drum Storage Shelter	2,800	Y			D&D-Auxiliary
C-741	Mobile Equipment Building	5,360	Y			D&D-Auxiliary
C-742	Cylinder Storage Building	2,745	Y			D&D-Auxiliary
C-742-B	Drying Agent Cylinder Storage	255	Y			D&D-Auxiliary
C-743	Office Building	9,973	Y			D&D-Trailer
C-743 T01	Office Trailer	1,440	Y			D&D-Trailer
C-743 T02	Office Trailer	1,440	Y			D&D-Trailer
C-743 T03	Office Trailer	1,200	Y			D&D-Trailer
C-743 T04	Shower Trailer	360	Y			D&D-Trailer
C-743 T05	Shower Trailer	360	Y			D&D-Trailer
C-743 T06	Office Trailer	360	Y			D&D-Trailer
C-743 T07	Temp. Trailer	360	Y			D&D-Trailer
C-743 T08	Office Trailer	1,440	Y			D&D-Trailer
C-743 T09	ER Office	1,440	Y			D&D-Trailer
C-743 T10	Office Trailer	1,440	Y			D&D-Trailer
C-743 T11	Temp. Office	1,600	Y			D&D-Trailer
C-743 T12	Temp. Office	1,600	Y			D&D-Trailer
C-743 T13	Temp. Office	1,600	Y			D&D-Trailer
C-743 T14	Temp. Office	1,600	Y			D&D-Trailer
C-743 T15	Temp. Office	1,600	Y			D&D-Trailer
C-743 T16	Temp. Office	1,600	Y			D&D-Trailer
C-743 T17	Field Support Lab Trailer	1,670	Y			D&D-Trailer
C-743-A	HP Storage	288	Y			D&D-Auxiliary
C-744	Lubrication Building	6,400	Y			D&D-Auxiliary
C-745-B1	Cylinder Storage Yard Office	128	Y			D&D-Auxiliary
C-746-A	North Warehouse (Metal Furn. & Scrap)	72,000	Y			D&D-Auxiliary
C-746-B	South Warehouse	72,000	Y			D&D-Auxiliary
C-746-D T01	HP Office	160	Y			D&D-Trailer
C-746-G	Electric Equipment Storage	2,400	Y			D&D-Auxiliary
C-746-G T01	Electric Equipment Storage	120	Y			D&D-Auxiliary
C-746-G T02	Electric Equipment Storage	240	Y			D&D-Auxiliary
C-746-L	Tractor Storage	364	Y			D&D-Auxiliary
C-746-M	Waste Askarel Storage Facility	432	Y			D&D-Auxiliary
C-746-Q	Greensalt Drum Storage Bldg.	49,500	Y			D&D-Contaminated Auxiliary
C-746-Q T01	LLW Storage Office	450	Y			D&D-Trailer
C-746-S1	Landfill Service Building	320	Y			D&D-Trailer



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	Reuse-Group I	0				
	Reuse-Auxiliaries	0				
	Reuse-Trailers	0				
	Infrastructure	67,122				
		8,401,589				

D&D FUND BUILDING LIST - PORTSMOUTH						
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BLDG. #	DESCRIPTION	GROSS FT2	D&D	REIND.	INFRASTR.	DISPOSITION
X-100	Administration Bldg.	135,000	Y			D&D-Auxiliary
X-100B	Air Conditioning Equip. Bldg.	800	Y			D&D-Auxiliary
X-100L	Environmental Control Trailer	500	Y			D&D-Auxiliary
X-101	Dispensary	10,315	Y			D&D-Auxiliary
X-101A	Credit Union Trailer		Y			D&D-Auxiliary
X-102	Cafeteria	18,895	Y			D&D-Auxiliary
X-103	Auxiliary Office Bldg.	10,025	Y			D&D-Auxiliary
X-104	Guard Headquarters	9,107	Y			D&D-Auxiliary
X-104A	Indoor Firing Range Bldg.	3,640		Y		Reuse-Auxiliary
X-105	Electronic Maintenance Bldg.	11,063	Y			D&D-Auxiliary
X-106	Tactical Response Station	6,214	Y			D&D-Auxiliary
X-106B	Fire Training Building	2,400	Y			D&D-Auxiliary
X-108A	South Portal and Shelter	1,030	Y			D&D-Auxiliary
X-108B	North Portal and Shelter	300	Y			D&D-Auxiliary
X-108E	Construction Entrance Portal	615	Y			D&D-Auxiliary
X-108H	Pike Avenue Portal	100	Y			D&D-Auxiliary
X-109A	Personnel Monitor Building	1,075	Y			D&D-Auxiliary
X-109B	Personnel Monitor Building	324	Y			D&D-Auxiliary
X-109C	Personnel Monitor Building	720	Y			D&D-Auxiliary
X-111A	SNM Monitoring Portal, X-326	858	Y			D&D-Auxiliary
X-111B	SNM Portal Northwest, X-326	300	Y			D&D-Auxiliary
X-114A	Pistol Range	1,400	Y			D&D-Auxiliary
X-215D	Electric Power Tunnel		Y			D&D-Auxiliary
X-220A	Instrumentation Tunnels		Y			D&D-Auxiliary
X-230J2	South Environ. Sampling Bldg.	110	Y			D&D-Auxiliary
X-230J3	West Environ. Sampling Bldg.	110	Y			D&D-Auxiliary
X-230J5	West Monitoring Facility	144	Y			D&D-Auxiliary
X-230J6	Northeast Monitoring Facility	144	Y			D&D-Auxiliary
X-230J7	East Monitoring Facility	144	Y			D&D-Auxiliary
X-230J8	Environmental Storage Bldg.	96	Y			D&D-Auxiliary
X-230J9	North Environ. Sampling Bldg.	96	Y			D&D-Auxiliary
X-300	Plant Control Facility	16,014	Y			D&D-Auxiliary
X-300A	Process Monitoring Bldg.	1,427	Y			D&D-Auxiliary
X-300B	Plant Control Facility Carport		Y			D&D-Auxiliary
X-326	Process Building	2,566,792	Y			D&D-Process
X-330	Process Building	2,796,600	Y			D&D-Process
X-333	Process Building	2,850,216	Y			D&D-Process
X-334	Transformer Strg. Clean. Bldg.	2,512	Y			D&D-Auxiliary
X-342A	Feed Vap. & Flu. Gen. Bldg.	13,761	Y			D&D-Contaminated Auxiliary

D&D FUND BUILDING LIST - PORTSMOUTH						
FY 2000 REVISION						
BLDG. #	DESCRIPTION	GROSS FT2	D&D	REIND.	INFRASTR.	DISPOSITION
X-342B	Fluorine Storage Bldg.	1,526	Y			D&D-Contaminated Auxiliary
X-343	Feed Vap. & Samp. Fac.	14,721	Y			D&D-Contaminated Auxiliary
X-344A	UF6 Samp. Fac.	91,586	Y			D&D-Contaminated Auxiliary
X-344B	Maint. Strg. Bldg.	6,025	Y			D&D-Contaminated Auxiliary
X-344C	HF Strg. Bldg.	1,677	Y			D&D-Contaminated Auxiliary
X-344F	Safety Bldg.	106	Y			D&D-Contaminated Auxiliary
X-345	SNM Storage Bldg.	36,061	Y			D&D-Contaminated Auxiliary
X-530B	Switch House	112,560			Y	Infrastructure
X-530C	Test & Repair Bldg.	1,250	Y			D&D-Auxiliary
X-530D	Oil House	465	Y			D&D-Auxiliary
X-530E	Valve House	527	Y			D&D-Auxiliary
X-530F	Valve House	527	Y			D&D-Auxiliary
X-533B	Switch House	148,756	Y			D&D-Powerhouse
X-533C	Test & Repair Bldg.	1,250	Y			D&D-Auxiliary
X-533D	Oil House	465	Y			D&D-Auxiliary
X-533E	Valve House	527	Y			D&D-Auxiliary
X-533F	Valve House	527	Y			D&D-Auxiliary
X-533H	Gas Reclaiming Cart Garage	1,200	Y			D&D-Auxiliary
X-540	General Telephone Bldg.	2,652	Y			D&D-Auxiliary
X-600	Steam Plant	19,506	Y			D&D-Powerhouse
X-600B	Steam Plant Shop Bldg.	960	Y			D&D-Auxiliary
X-605	Sanitary Water Control House	456			Y	Infrastructure
X-605H	Booster Pump House & App.	597			Y	Infrastructure
X-605I	Chlorinator Bldg.	288			Y	Infrastructure
X-605J	Diesel Generator Bldg.	192			Y	Infrastructure
X-608	Raw Water Pump House	11,600			Y	Infrastructure
X-611	Water Trmt. Plant & App.	7,978			Y	Infrastructure
X-611B	Sludge Lagoon Pumping Station	384			Y	Infrastructure
X-611C	Filter Bldg.	7,600			Y	Infrastructure
X-611D	Recarbonization Inst. Bldg.	240			Y	Infrastructure
X-616	Liquid Effluent Control Fac.	2,000	Y			D&D-Auxiliary
X-617	South pH Control Facility	384			Y	Infrastructure
X-618	North Holding Pond Strg. Bldg.	144	Y			D&D-Auxiliary
X-621	Coal Pile Runoff Trmt. Fac.	1,900	Y			D&D-Auxiliary
X-622	Treatment Facility	3,775			Y	Infrastructure
X-623	Treatment Facility	5,810			Y	Infrastructure
X-624	Treatment Facility	900			Y	Infrastructure
X-625	Treatment Facility	1,200			Y	Infrastructure
X-626-1	Recirc. Water Pump House	7,010	Y			D&D-Auxiliary
X-626-2	Cooling Tower	19,082	Y			D&D-Cooling Tower
X-630-1	Recirc. Water Pump House	10,249	Y			D&D-Auxiliary

D&D FUND BUILDING LIST - PORTSMOUTH						
FY 2000 REVISION						
BLDG. #	DESCRIPTION	GROSS FT2	D&D	REIND.	INFRASTR.	DISPOSITION
X-630-2A	Cooling Tower	30,894	Y			D&D-Cooling Tower
X-630-2B	Cooling Tower	30,894	Y			D&D-Cooling Tower
X-633-1	Recirc. Water Pump House	11,268	Y			D&D-Auxiliary
X-633-2A	Cooling Tower	48,557	Y			D&D-Cooling Tower
X-633-2B	Cooling Tower	48,557	Y			D&D-Cooling Tower
X-633-2C	Cooling Tower	16,884	Y			D&D-Cooling Tower
X-633-2D	Cooling Tower	16,884	Y			D&D-Cooling Tower
X-640-1	Pump House	1,648	Y			D&D-Auxiliary
X-700	Converter Shop & Clean. Bldg.	128,852	Y			D&D-Contaminated Auxiliary
X-700A	A/C Equipment Bldg.	2,400	Y			D&D-Auxiliary
X-701A	Lime House	858			Y	Infrastructure
X-701D	Water De-ionization Fac.	726			Y	Infrastructure
X-701E	Neutralization Bldg.	400			Y	Infrastructure
X-701F	Effluent Monitoring Facility	36			Y	Infrastructure
X-705	Decontamination Bldg.	100,776	Y			D&D-Contaminated Auxiliary
X-705A	Incinerator	979		GONE		Gone
X-705D	Heating Booster Pump Bldg.	735			Y	Infrastructure
X-710	Technical Services Bldg.	143,281	Y			D&D-Contaminated Auxiliary
X-710A	Tech. Serv. Gas Manifold Shed		Y			D&D-Auxiliary
X-710B	Explosion Test Facility	245	Y			D&D-Contaminated Auxiliary
X-720	Maint. & Stores Bldg.	312,035	Y			D&D-Contaminated Auxiliary
X-720A	Maint. & Stores Gas Mani. Shed		Y			D&D-Auxiliary
X-720B	Radio Base Station Bldg.	768	Y			D&D-Auxiliary
X-720C	Paint and Oil Strg. Bldg.	4,200	Y			D&D-Auxiliary
X-721	Radiation Instr. Calibration Fac.	4,500	Y			D&D-Auxiliary
X-735A	Landfill Utility Building	2,827	Y			D&D-Auxiliary
X-740	Waste Oil Storage Fac.	6,300	Y			D&D-Auxiliary
X-741	Oil Drum Storage Fac.	3,600	Y			D&D-Auxiliary
X-742	Gas Cyl. Storage Fac.	2,800	Y			D&D-Auxiliary
X-743	Storage Warehouse	13,750	Y			D&D-Auxiliary
X-744B	Salt Storage Building	1,200		Y		Reuse-Auxiliary
X-744G	Bulk Storage Bldg. - Non-UEA	114,400	Y			D&D-Auxiliary
X-744H	Bulk Storage Building	58,707		Y		Reuse-Auxiliary
X-744J	Bulk Storage Building	58,707		Y		Reuse-Auxiliary
X-744K	Warehouse K - Non-UEA	35,640		Y		Reuse-Auxiliary
X-744L	Stores & Maint. Warehouse	53,280	Y			D&D-Auxiliary
X-744N	Lithium Storage	15,184		Y		Reuse-Auxiliary
X-744P	Lithium Storage	15,184		Y		Reuse-Auxiliary
X-744Q	Lithium Storage	15,184		Y		Reuse-Auxiliary
X-744S	Warehouse S - Non-UEA	47,570		Y		Reuse-Auxiliary
X-744T	Warehouse T - Non-UEA	98,060		Y		Reuse-Auxiliary
X-744U	Warehouse U - Non-UEA	98,060		Y		Reuse-Auxiliary
X-744W	Surplus & Salvage Warehouse	84,000		Y		Reuse-Auxiliary
X-746	Materials Rec'v. &	19,975	Y			D&D-Auxiliary

D&D FUND BUILDING LIST - PORTSMOUTH						
FY 2000 REVISION						
BLDG. #	DESCRIPTION	GROSS FT2	D&D	REIND.	INFRASTR.	DISPOSITION
	Inspection					
X-750	Mobile Equip. Maint. Shop	15,500	Y			D&D-Auxiliary
X-750A	Garage Storage Bldg.	473	Y			D&D-Auxiliary
X-752	Maint. Storage Warehouse	18,000	Y			D&D-Auxiliary
X-760	Chemical Engineering Bldg.	8,047	Y			D&D-Auxiliary
X-770	Mechanical Testing Bldg.	22,640	Y			D&D-Contaminated Auxiliary
		10,702,975				
<b>Centrifuge Facilities</b>						
X-112	Data Processing Building	30,000		Y		
X-751	Mobile Equip. Garage	16,360		Y		
X-1000	GCEP Admin. Bldg.	73,700		Y		
X-1007	Fire Station	12,800		Y		
X-1020	Emerg. Control Center	7,180		Y		
X-1107BP	Interplant Portal - Ped.	1,436	Y			
X-1107BV	Interplant Portal - Veh.	1,436	Y			
X-1107DP	NE Portal - Ped.	1,740	Y			
X-1107DV	NE Portal - Veh.	1,740	Y			
X-1107EP	NW Portal - Ped.	1,740	Y			
X-1107EV	NW Portal - Veh.	1,740	Y			
X-1107FP	SW Portal - Ped.	1,740	Y			
X-1107FV	SW Portal - Veh.	1,740	Y			
X-3000	Electrical Maint. Fac.	12,371		Y		
X-3001	Process Building	303,680	Y	Y		
X-3002	Process Building	303,680	Y	Y		
X-3012	Process Support Building	56,243		Y		
X-3346	Feed & Withdrawal Fac.	167,236	Y	Y		
X-5000	Switch House	7,500			Y	
X-6000	Cooling Tower Pump House	8,165	Y			
X-6001	Cooling Tower	4,893	Y			
X-6619	Sewage Treatment Facility	5,030			Y	
X-6644	Pump House				Y	
X-7721	Maint. Storage & Training Bldg.	136,188		Y		
X-7725	Recycle/Assembly Bldg.	837,900	Y	Y		
X-7725A	Waste Accounting Fac.	29,647	Y			
X-7726	Central Training & Test Fac.	62,400		Y		
X-7727H	Transfer Corridor	26,078		Y		
		2,068,003				
<b>Summary By Disposition</b>						
	Gone	979				
	D&D-Process	8,213,608				
	D&D-Contaminated Auxiliary	873,292				
	D&D-Auxiliary Bldgs	547,227				
	D&D-Cooling Towers	211,752				
	D&D-Powerhouse Bldgs	168,262				
	Reuse-Contaminated Auxiliary	0				
	Reuse-Auxiliary	531,136				

D&D FUND BUILDING LIST - PORTSMOUTH						
FY 2000 REVISION						
BLDG. #	DESCRIPTION	GROSS FT2	D&D	REIND.	INFRASTR.	DISPOSITION
	Infrastructure-Auxiliary	156,719				
		10,702,975				

**APPENDIX F**

**REINDUSTRIALIZATION PROGRAM INTERFACE FOR  
TERMINATION OF GASEOUS DIFFUSION PLANT LEASE BY THE  
U.S. ENRICHMENT CORPORATION**

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**Reindustrialization Program Interface  
for  
Termination of Gaseous Diffusion Plant Lease  
by the  
U.S. Enrichment Corporation**

GDP sites are very large complexes consisting of administrative, support, auxiliary, production, and warehouse facilities. PGDP, for example, has four process buildings with a total of 6.3 million square feet (ft<sup>2</sup>) of floor space, and 2.1 million ft<sup>2</sup> of administrative, support, auxiliary, and warehouse space. PORTS is similar in composition and space.

Presently the GDPs collectively employ over 4,000 individuals; as these plants are returned to DOE, actions must be taken to avoid adverse long-term regional economic impacts brought about by employment reductions.

The return of a GDP provides DOE with opportunities for broad-based decision-making. For example, D&D of the facility for shutdown may occur in accordance with the applicable regulatory requirements. DOE may also choose to consider leasing the facilities instead of shutting down the plant. Or DOE may determine that the best approach is to conduct D&D in parallel with leasing with the goal of a self-sustaining industrial park in the future. DOE may also pursue the sale or barter for the value of remaining assets for reductions in the cost of site closure. Examples of reindustrialization opportunities include the following:

- the sale, reuse, or barter involving cleanup services, surplus materials, and supplies that will remain after production operations have ceased;
- the sale, reuse, or barter involving cleanup services, maintenance and process equipment, and machinery that will remain;
- the reuse or lease of facilities; or
- a combination of each approach.

The USEC-DOE facility lease agreement requires USEC to provide a 2-year notice of the lease termination. USEC is a private sector company; therefore, its decision to terminate the lease is outside the scope of formal environmental analysis.

DOE activities to prepare for the conclusion of the economic operating life of the GDPs (as enrichment facilities) and termination of the USEC-operating leases can be divided into three periods:

- pre-USEC notification (of the lease termination),
- post-termination notification, and
- post-lease termination.

The remainder of this appendix will discuss DOE activities to prepare for the conclusion of the economic life of the GDPs as enrichment facilities and termination of the USEC operating leases, as well as the

identification and conversion of residual economic value to reduce the cost of facility disposition and foster regional economic diversification. To minimize the length of time reusable facilities at a shut-down GDP remain vacant or underutilized, DOE activities should be initiated sufficiently early to permit the lease of the facilities or barter of the excess materials and equipment within 3 months following termination of the lease.

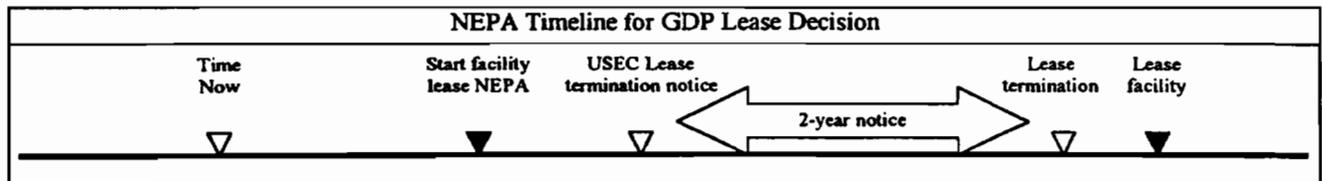
**Pre-USEC Lease Termination Notification**

DOE and DOE-contractor activities preceding USEC notification of lease termination consists of activities with lead times generally exceeding 2 years. Such activities include the following:

- initiation of any real estate study required by General Service Administration regulations;
- National Environmental Policy Act (NEPA) analysis (for the lease of suitable land and facilities, or other alternatives);
- developing partnerships with local CROs and other stakeholders;
- studies of the local and regional lease markets; and
- obtaining general and facility specific information about each building to permit evaluation and identification of buildings with high reuse potential.

Additional information on these activities is provided below.

1. Federal decisions, such as a decision to lease and reuse facilities for a purpose different from the current use, must be reached within the NEPA framework. NEPA requires identification and analysis of the environmental impacts of baseline and alternative decision actions. NEPA requirements are applied on a graded basis: the greater the likelihood of impacts, favorable or adverse, the more complex the study and analysis of the proposed actions. This may or may not be correlated to the complexity in the proposed change in use, as the focus of NEPA is to analyze the impacts, resulting in informed decision-making. In general, NEPA reviews are documented by a "Categorical Exclusion (CX)," an "Environmental Assessment (EA)," or an "Environmental Impact Statement (EIS)," depending upon the likelihood of impacts to the human environment. The scope of the NEPA definition of the human environment includes socioeconomic effects, transportation impacts, effects on the natural environment, and environmental justice issues. The lease and reuse of GDP facilities for purposes other than the enrichment of uranium by the gaseous diffusion process may require timely completion of an EA (by the GDP site), or depending upon a finding of significant environmental impacts, the completion of an EIS (by DOE-HQ). Completion of the study and analysis for either an EA or EIS, and publications and resolution of regulator and public comments on either document, will exceed thirty (30) months and could require several years for controversial and complex issues.



2. Develop a strong partnership with the local CRO and public participation stewardship organizations.
3. Start information gathering to understand the local and regional lease markets (existing major leasees and industry, types of secondary and related industries, planned expansions/relocations, opportunities for other industries, etc.).
4. Initiate activities to obtain general and facility specific building data [ceiling heights, crane availability, utility systems, operating history, modification history, environmental characterization data (chemical and radiological analytes), classification status, etc.] This information will serve as the basis to evaluate the desirability of subsequent reuse of each specific building.
5. Create a facility disposition/reuse availability matrix.

Facility Number	Facility Size	Facility Description	Demolish Y/N	Lease/Reuse Y/N	Date Available for Lease

#### Post-USEC Lease Termination Notification

DOE and DOE-contractor reindustrialization activities during the 2-year period between USEC notice and lease termination are limited to activities that do not disrupt USEC's enrichment process purge, deposit removal, and system shutdown.

1. Lease of facilities will require the following preliminary/preparatory activities:
  - a. Identify (contract with) brokers/agents for lease of facilities.
  - b. Identify facilities that are candidates for reuse.
  - c. Obtain current and historic characterization data (chemical, physical, and radiological characterization) for facilities that are reuse candidates.
  - d. Evaluate candidate facilities for reuse (include the infrastructure that services the facility and assess the facility's economic strengths and weaknesses).
  - e. Evaluate the economic environment in which each lease will compete.
  - f. Determine the segment of the lease market place in which each candidate facility should compete.
  - g. Determine and plan facility modifications needed to permit lease of the facility.
  - h. Market the facility to prospective leasees.
2. Identify (contract with) brokers for sale/barter of surplus equipment and machinery.

3. Identify (contract with) brokers for sale/barter of surplus materials and supplies.
4. Prepare necessary documentation and take other actions needed to lease federal land and buildings.

#### **Post-Lease Termination**

1. Lease of facilities will require the following activities.
  - a. Prepare reusable facilities for lease (may require site modifications and development).
  - b. Execute lease documents to reduce the plant's D&D cost to the government.
  - c. Barter lease payments for facility D&D services.

The lease of a facility may include a period of reduced lease payments in exchange for the appropriately qualified lessee completing the D&D of the leased facility or another site facility. An example of this approach is the lease of the K-1200-complex at ETTP (formerly ORGDP) to M&EC. In exchange for reduced lease payments, M&EC is removing contaminated process systems, decontaminating facility structure and systems, and preparing to reuse the facility that M&EC will subsequently occupy. The benefit to DOE and the site is the avoidance of costs to perform the D&D services being completed by the lessee.

2. Reuse and/or recycle of equipment and machinery remaining after lease termination will require activities to do the following:
  - a. Locate surplus equipment and machinery.
  - b. Identify and determine the condition of available equipment and machinery (chemical, physical, and radiological characterization).
  - c. Inventory the equipment and machinery.
  - d. Evaluate the equipment and machinery for reuse and/or recycle.
  - e. Identify candidate beneficiaries of the equipment and machinery.
  - f. Prepare reusable and recyclable equipment and machinery for sale or barter.
  - g. Conduct sales and barter agreements to apply the asset's value to disposition of the GDP.

The value of equipment and machinery remaining after lease termination can be sold or bartered for site D&D services. An example of this approach was the barter and sale of equipment and machinery remaining in the ETTP central shops fabrication facility, Bldg. K-1401, to offset the costs of D&D of the interior of the building and other activities required to prepare the building for subsequent lease and reuse.

3. Reuse and/or recycle of surplus materials and supplies abandoned in the GDP facilities will require activities to do the following:

- a. Locate surplus materials and supplies.
- b. Identify and determine the condition of available materials (include chemical, physical, and radiological characterization).
- c. Inventory the materials.
- d. Evaluate the materials for reuse and/or recycle.
- e. Prepare reusable and recyclable materials for sale or barter.
- f. Identify candidate beneficiaries of the materials.
- g. Conduct sales and barter agreements to apply the asset's value to disposition of the GDP.

The value of surplus materials and supplies abandoned in GDP facilities after lease termination can be sold or bartered for site D&D services. Examples of this approach include:

- The barter of 130 spools of electrical and communications cable for D&D services in the interior of the ETTP decontamination process building.
- The sale of ETTP surplus chemicals and supplies remaining in the central stores inventory and use of sales revenue to offset other material disposition activities.
- The sale of the ETTP Coal Handling Facility, K-1501-E, in exchange for the dismantlement and removal of the facility from the site.
- The planned sale of recyclable scrap metal from the K-770 radioactive scrap metal yard and the K-1094 suspect-radioactive scrap metal yard.

### **Conclusion**

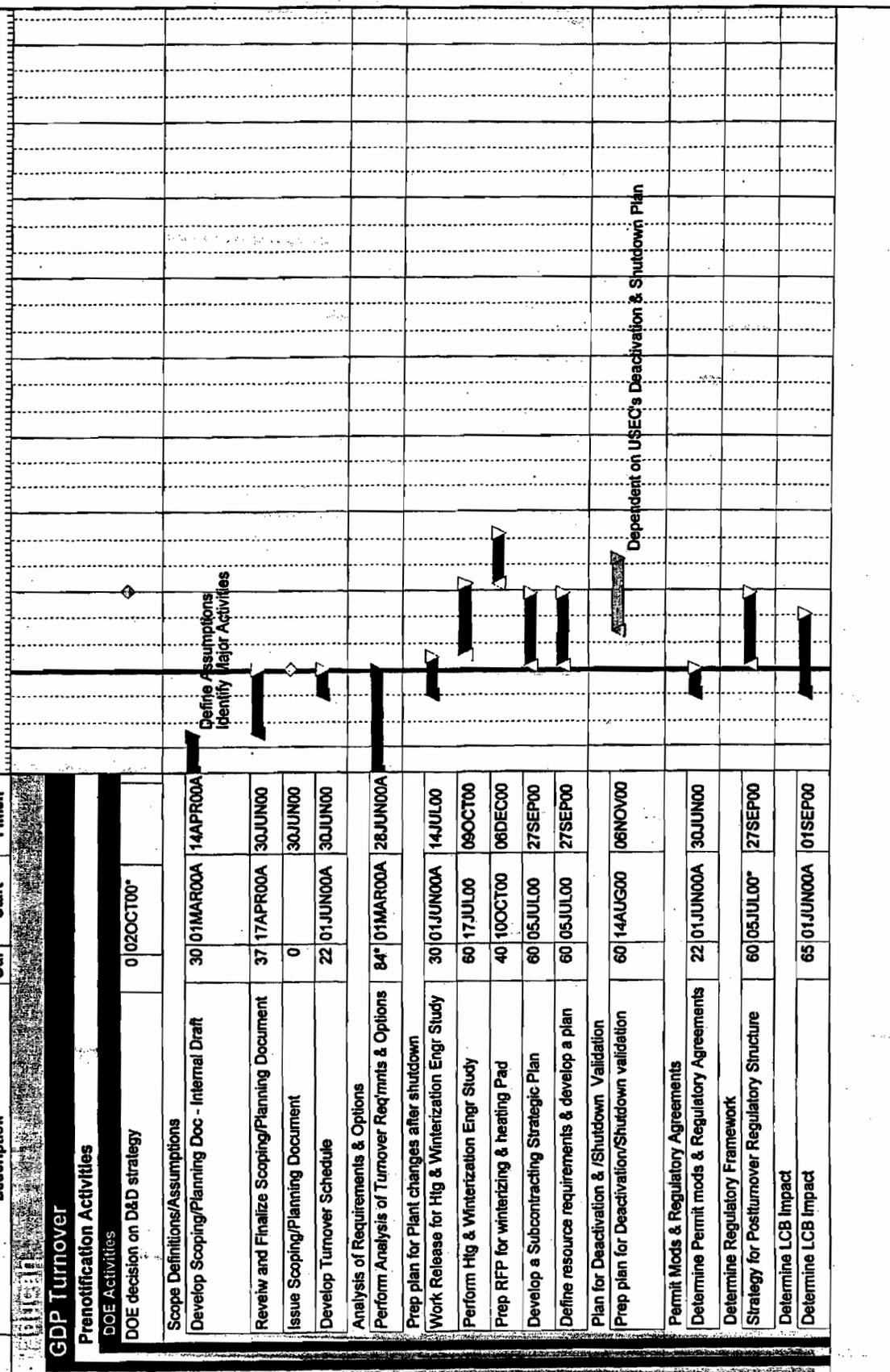
The shutdown of uranium enrichment and termination of the operating lease of GDP facilities can provide DOE with opportunities to reduce site disposition costs. One way this objective can be achieved is through the timely identification and conversion of the residual value in supplies, equipment, and facilities into site D&D services. Maximizing the benefit of the residual value is best achieved through the early lease of reusable facilities. Preparing for, and completing prerequisite activities prior to, the lease of reusable facilities can extend over a period of years. DOE and the DOE contractor at ETTP have achieved reduced site disposition costs through the sale, barter, and lease of residual assets.

**APPENDIX G**

**BECHTEL JACOBS COMPANY LLC GDP TURNOVER DETAIL  
SCHEDULE SORTED BY WBS**

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2000 2001 2002  
 M A M J J A S O N D J F M A M J J A S O N D J F M A M J J J J



Activity Description	Orig Dur	Early Start	Early Finish
<b>GDP Turnover</b>			
<b>Prenotification Activities</b>			
<b>DOE Activities</b>			
DOE decision on D&D strategy	0	02OCT00*	
<b>Scope Definitions/Assumptions</b>			
Develop Scoping/Planning Doc - Internal Draft	30	01MAR00A	14APR00A
Review and Finalize Scoping/Planning Document	37	17APR00A	30JUN00
Issue Scoping/Planning Document	0		30JUN00
Develop Turnover Schedule	22	01JUN00A	30JUN00
<b>Analysis of Requirements &amp; Options</b>			
Perform Analysis of Turnover Req'mnts & Options	84*	01MAR00A	28JUN00A
<b>Prep plan for Plant changes after shutdown</b>			
Work Release for Hg & Winterization Engr Study	30	01JUN00A	14JUL00
Perform Hg & Winterization Engr Study	60	17JUL00	09OCT00
Prep RFP for winterizing & heating Pad	40	10OCT00	08DEC00
Develop a Subcontracting Strategic Plan	60	05JUL00	27SEP00
Define resource requirements & develop a plan	60	05JUL00	27SEP00
<b>Plan for Deactivation &amp; /Shutdown Validation</b>			
Prep plan for Deactivation/Shutdown validation	60	14AUG00	06NOV00
<b>Permit Mods &amp; Regulatory Agreements</b>			
Determine Permit mods & Regulatory Agreements	22	01JUN00A	30JUN00
<b>Determine Regulatory Framework</b>			
Strategy for Postturnover Regulatory Structure	60	05JUL00*	27SEP00
<b>Determine LCB Impact</b>			
Determine LCB Impact	65	01JUN00A	01SEP00

Start Date 01MAR00  
 Finish Date 12JUL02  
 Data Date 28JUN00  
 Run Date 29JUN00 15:13

Legend:  
 Early Bar (thick black bar)  
 Progress Bar (thin black bar)  
 Critical Activity (white bar with black outline)

GDPT

Appendix G  
 Bechtel Jacobs Company LLC  
 GDP Turnover  
 Detail Schedule Sorted by WBS

Sheet 1 of 4

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