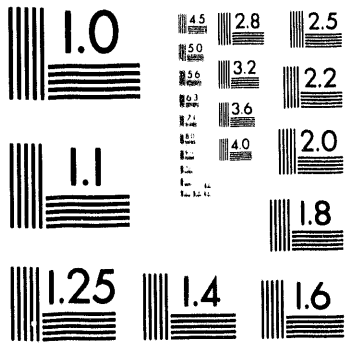
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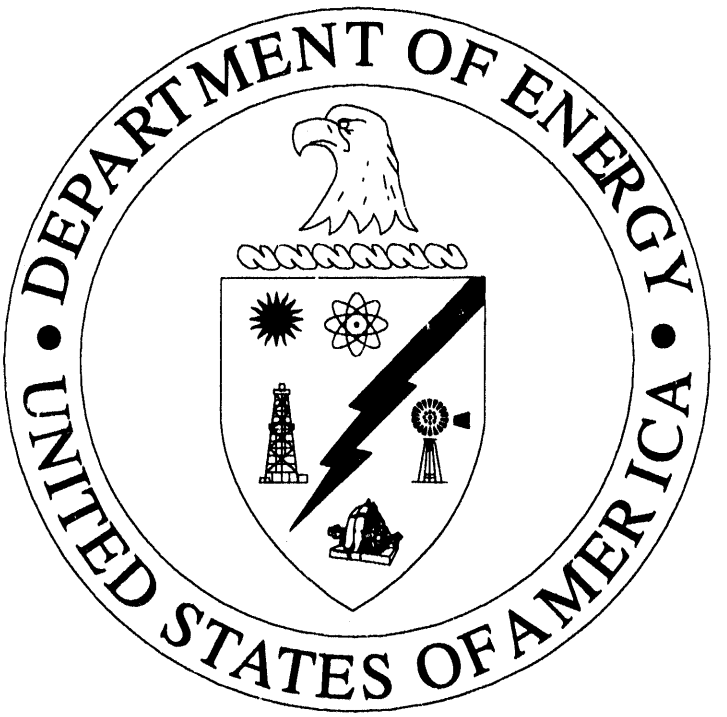

ENVIRONMENTAL RESTORATION SITE-SPECIFIC PLAN FOR THE PORTSMOUTH GASEOUS DIFFUSION PLANT

U.S. Department of Energy
Oak Ridge Field Office

POEF/ER-4542

ENVIRONMENTAL RESTORATION
SITE-SPECIFIC PLAN FOR THE PORTSMOUTH GASEOUS DIFFUSION PLANT

FY93

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contributed to the preparation of this document and should not be considered an eligible contractor for its review.

DISCLAIMER

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LIST OF TABLES AND FIGURES

LIST OF ACRONYMS

ACO	Administrative Consent Order
ADS	Activity Data Sheet
AMERWM	Assistant Manager for Environmental Restoration and Waste Management
AST	Aboveground Storage Tank
CD	Consent Decree
CERCLA	Comprehensive Environmental Response Compensation Liability Act of 1980 (Superfund)
CMI	Corrective Measures Investigation
CMS	Corrective Measures Study
COR	Contracting Officer Representative
COS	Closure options study
CX	Category Exclusions
D&D	Decontamination and Decommissioning
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
Energy Systems	Martin Marietta Energy Systems, Inc.
EPA	Environmental Protection Agency
ERD	Environmental Restoration Division
ER	Environmental Restoration
ERP	Environmental Restoration Program
ES&H	Environment, Safety and Health
F/W	Feed/Withdrawal
FY	Fiscal Year
FYP	Environmental Restoration and Waste Management Five Year Plan
GCEP	Gaseous Centrifuge Enrichment Plant
GSA	General Services Administration
GWP&T	Groundwater Pump and Treat
HASA	High Assay Sampling Area
HSWA	Hazardous and Solid Waste Amendment
IMP	Interim Measures Plan
IRM	Interim Remedial Measures
NEPA	National Environmental Policy Act
OEPA	Ohio Environmental Protection Agency
OR	DOE, Oak Ridge Field Office
PCB	Polychlorinated Biphenyl
PORTS	Portsmouth Gaseous Diffusion Plant
PSB	Process Support Building

QA	Quality Assurance
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
REAPS	Reportable Excessive Automated Property System
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RU	RCRA Regulated Unit
SSP	Site-Specific Plan
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TSCA	Toxic Substances Control Act
UST	Underground Storage Tank

1.0 INTRODUCTION

1.1 PURPOSE

The United States Department of Energy (DOE) is committed to achieving and maintaining environmental regulatory compliance at its waste sites and facilities, while responding to public concerns and emphasizing waste minimization. DOE publishes the Environmental Restoration and Waste Management Five-Year Plan (FYP) annually to document its progress towards these goals.

The purpose of this Site-Specific Plan (SSP) is to describe past, present, and future activities undertaken to implement these FYP goals at the Portsmouth Gaseous Diffusion Plant (PORTS). The SSP is presented in sections emphasizing Environmental Restoration description of activities, resources, and milestones.

1.2 DESCRIPTION OF THE PORTSMOUTH GASEOUS DIFFUSION PLANT

The principal on-site process at Portsmouth Gaseous Diffusion Plant (PORTS) in Ohio is the separation of uranium isotopes through gaseous diffusion. This process produces enriched uranium which is used for nuclear fuel in commercial power plants and for military purposes. The site covers approximately 3,700 acres in rural south-central Ohio. A perimeter road surrounds the major facilities which are contained within a 500-acre security area. The plant consists of 109 permanent buildings containing over 10 million square feet of gross floor area. In addition to an extensive road and railroad network, the site has expansive utility systems for electrical power distribution; process and sanitary water supply, treatment, and distribution; storm drainage; sewage treatment; and dry air supply.

The facility is located in a sparsely populated rural area of southern Ohio. The nearest community is Piketon, Ohio, approximately 3 miles northwest of the site. Piketon's population is approximately 2,500. There is little industrial development in Pike County, and marginal farming is the primary use of the land. The facility is managed by Martin Marietta Energy Systems, Inc. (Energy Systems) for the United States Department of Energy.

1.3 ENVIRONMENTAL RESTORATION PROGRAM OVERVIEW

Environmental problems at the Portsmouth Gaseous Diffusion Plant (PORTS) involve mostly spent solvent contamination of an aquifer beneath the site. Solvents were used for industrial metal cleaning operations required to maintain the facility during operations. Plumes of groundwater contamination resulting from the leaching of these spent solvents extend from several locations within the plant.

The purpose of the PORTS Environmental Restoration Program is to identify, characterize, and correct any environmental damage at the plant arising from past operations, waste handling, and disposal practices. Objectives are listed below.

- Survey plant reservation and surrounding areas to determine and identify possible environmental problems that have resulted from past and current plant operations.
- Characterize problem areas with respect to identity and concentration of environmental contaminants.
- Identify sites as candidates for immediate closure, interim remedial action, or further investigation into the character and extent of contamination.
- Survey and evaluate appropriate remediation technologies and identify cost-effective alternatives.
- Initiate, supervise, and monitor implementation of the selected remediation alternative(s) to restore environmental quality.
- Provide knowledgeable points of contact to appropriate federal, state, and local regulatory authorities.

1.4 FUNDING SUMMARY

A fiscal year (FY) 1993 funding summary table for the Portsmouth Gaseous Diffusion Plant (PORTS) Environmental Restoration Program (ERP) is provided in Table 1. Individual Activity Data Sheets (ADSs) are addressed in later sections of this Site-Specific Plan (SSP) under their specific category.

FY93 funding represents the U.S. Office of Management and Budget (OMB) target level. The FY92 and FY93 activities discussed in this plan are those that can be accomplished with available funds. Milestone schedules provided in this plan, especially for FY94-98, are subject to change as FY budgets are established and project needs are better defined and prioritized.

The scenario funded at the planning level represents a preliminary estimate of funding to meet all legal requirements and perform other high priority activities. Activities not required by law are justified on programmatic, technical, cost-effective, and/or efficiency grounds.

Table 1. PORTS ERP Fiscal Year Funding Summary
Planning ($000)

	1993
*ER	53,706

*Includes Uranium Enrichment Program contribution of $25,673.

Activities within ERP have been prioritized in the following list.

- Priority 1 includes activities necessary to prevent near-term adverse impacts to workers.
- Priority 2 items encompass those activities required to meet the terms of agreements (in place or in negotiation) between DOE and local agencies and between state and federal agencies.
- Priority 3 includes activities required for compliance with external environmental regulations that were not captured by Priority 1 or 2.
- Priority 4 includes activities that are not required by regulations but that would be beneficial.

2.0 REQUIREMENTS FOR IMPLEMENTATION

2.1 FEDERAL AND STATE REGULATIONS

The legal requirements of the Atomic Energy Act, other federal and state statutes and regulations, and U.S. Department of Energy (DOE) Orders, as well as the consent decrees, court orders, and agreements relevant to the Portsmouth Gaseous Diffusion Plant (PORTS) site, are discussed in this section. Interagency agreements, compliance agreements, and consent orders between PORTS and federal and state regulatory agencies are also discussed in Section 9. The major federal and state statutes applicable to the environmental Restoration Program (ERP) are summarized below.

The Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), regulates hazardous waste management. The primary objective of RCRA is to protect human health and the environment. The secondary objective is to conserve valuable material and energy resources by providing assistance to state and local governments for:

- prohibiting open dumping;
- regulating the management of hazardous wastes;
- encouraging recycling and treatment of hazardous wastes;
- providing guidelines for solid waste management; and
- promoting beneficial solid waste management, resource recovery, and resource conservation systems.

RCRA provides cradle-to-grave tracking of the hazardous wastes from generations to transport to treatment, storage, or disposal. The disposal sites that were closed or abandoned before November 19, 1980 (effective date of the RCRA regulations) are regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Anyone, including operators of a federal facility, who generates, transports, treats, stores, or disposes of hazardous waste and anyone who produces, burns, distributes, or markets any hazardous waste-derived fuels or stores hazardous material in underground tanks must comply with RCRA by notifying the U.S. Environmental Protection Agency (EPA) or authorized states of their activities.

As amended by HSWA, RCRA does several things:

(1) Sec. 3004(u) requires corrective actions for releases of hazardous constituents,
(2) Sec. 3004(v) mandates off-site corrective actions, and
(3) Sec. 3008(h) requires corrective actions for releases of hazardous constituents during interim status, after November 19, 1980.

The RCRA provisions for corrective actions overlap to some degree with CERCLA provisions, creating the need for coordination of RCRA and CERCLA activities. RCRA will impact all major categories of tasks contemplated by this plan.

NEPA requires every federal agency to consider the environment in its decision making process and publicly address the environmental impact of major federal actions that may significantly affect the environment before such actions are initiated. Potential envronmental impacts and issues of concern are addressed in environmental assessments or environmental impact statements, which are made available to the public and are circulated to other interested agencies and individuals. U.S. Department of Energy (DOE) Order 5400.4 establishes DOE policy on integrating NEPA and CERCLA processes for ER projects. DOE Order 5440.1D establishes internal DOE responsibilities and procedures for implementation of NEPA. DOE has also established DOE NEPA Implementing Procedures; 57 FR 15114, (1992).

The Toxic Substances Control Act (TSCA) regulates, among other things, the use and disposal of materials containing more than 50 parts per million of polychlorinated biphenyl (PCB). TSCA applies to Environmental Restoration (ER) projects that deal with PCBs.

Ohio's hazardous waste management program, which received final authorization from EPA on June 30, 1989, is based on RCRA. Because of Ohio EPA's continuing obligation to maintain a hazardous waste management program that is consistent with, equivalent to, and at least as stringent as the federal program, Ohio's hazardous waste rules are revised regularly to reflect federal changes. Ohio's hazardous waste rules, located in Chapters 3745-49 to 3745-69 of the Ohio Administrative Code, are equivalent to the federal rules located in 40 CFR Parts 260 to 270. Under RCRA, states have the option of implementing provisions that are more stringent than the federal program.

2.2 DOE ORDERS

Department of Energy (DOE) and DOE contractors are subject to the requirements of DOE Orders in addition to the requirements of federal and state regulatory agencies. Therefore, DOE Orders will impact the Environmental Restoration (ER) process as well. DOE Orders of significance to these tasks are summarized below.

DOE Notice 4700.1 establishes DOE policy for management of Major System Acquisitions.

DOE Notice 5400.1, General Environmental Protection Program (11/9/88) establishes the environmental protection program for DOE operations, including DOE policy on ground water protection programs for ER projects.

DOE Order 5400.3, Hazardous and Radioactive Mixed Waste Management (2/22/89), establishes DOE hazardous and radioactive mixed waste policies and requirements. This Order clarifies DOE's interpretation of the definition of "by product material" (10 CFR 962) as it relates to Resource Conservation and Recovery Act (RCRA) regulation of mixed waste, and establishes the lines of authority at DOE/Headquarters for RCRA implementation.

DOE Order 5400.4 establishes DOE policy on integrating NEPA processes for ER projects

DOE Order 5440.1D, NEPA Compliance Program (2/22/91), establishes internal DOE responsibilities and procedures for implementing NEPA. It directs DOE line management to incorporate NEPA requirements early in the planning process by proposed actions.

DOE NEPA Implementing Procedures; 57 FR 15144, (1992) establishes the procedures to be followed in fulfilling DOE's NEPA responsibilities.

DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities (7/9/90), establishes requirements and guidelines for departmental elements to use in developing directives, plans and/or procedures relating to the conduct of operations at DOE facilities.

Chapter V of DOE Order 5820.2A sets forth requirements for decommissioning radioactively contaminated facilities. Planning for facility decommissioning must be initiated during the design phase for new facilities and before termination of operations for existing facilities and must consider the two-year budget cycle to ensure adequate funding availability.

Decommissioning project activities include facility characterization, the environmental review process (NEPA, RCRA), and technical engineering planning which includes Decommissioning Project Plan. Status reports on project activities must be prepared in accordance with DOE Order 1332.1A or 4700.1.

Post-decommissioning activities involve final chemical and radiological surveys and preparation of a project final report. The responsible field organization will compile a Project Data Package. Long-term maintenance, surveillance, and other safety controls will be provided by the responsible program organization. The decommissioned property may be released from DOE ownership according to the requirements of DOE Order 4300.1B. DOE Order 5700.6B requires that quality assurance be maintained by using applicable requirements of American National Standards Institute/American Society of Mechanical Engineers Nuclear Quality Assurance, 1989, "Quality Assurance Program Requirements for Nuclear Facilities" (ANSI/ASME - NQA-1).

2.3 FEDERAL AND STATE AGREEMENTS AND ORDERS

The Department of Energy (DOE) has entered into agreements with Environmetal Protection Agency (EPA) and the state of Ohio which outline the cleanup process and responsibilities of each agency in the cleanup. The EPA and the state maintain oversight of cleanup activities by reviewing work plans, approving study and cleanup methods, and performing periodic inspections of work in progress. The state of Ohio's oversight role is managed by the Ohio EPA. All environmental studies and cleanup activities must be conducted in accordance with federal and state regulations.

These agreements are being conducted in accordance with the Resource Conservation and Recovery Act (RCRA) Corrective Action Process, which consists of four phases:

- RCRA Facility Assessment (RFA),
- RCRA Facility Investigation (RFI),
- Corrective Measures Study (CMS), and
- Corrective Measures Implementation (CMI).

A formal RFA report was not prepared by agreement among DOE, EPA, and the State of Ohio due to the urgency to start the cleanup process at Portsmouth Gaseous Diffusion Plant (PORTS); however, an equivalent environmental audit was performed to satisfy the requirements of the RFA. Because of its size and the nature of groundwater flow, the plant was divided into four sections, or quadrants, for individual investigation as follows:

- Quadrant I - southern area of plantsite,
- Quadrant II - eastern area of plantsite,
- Quadrant III - western area of plantsite, and
- Quadrant IV - northern area of plantsite.

Each quadrant is being studied separately and will have its own RCRA Corrective Action Process.

The following agreements are major site-specific requirements, which serve as bases for tasks discussed in this site-specific plan.

EPA, Region V, Administrative Order by Consent

The EPA Administrative Consent Order is an agreement between the EPA and DOE to ensure compliance under Section 3008(h) of RCRA, as amended; 42 U.S.C., Section 6928(h); and 106(a) of CERCLA, as of 1980. Entering into this agreement, the mutual objectives of the EPA and DOE are listed.

- Perform Interim Remedial Measures sufficient to prevent any release of hazardous waste, hazardous constituents, and/or hazardous substances from the facility including, but not limited to, a plume intercept project at the Little Beaver Creek, remediation of well 6B, and X-231B biodegradation plot plume containment wells.

- Prepare work plans for:

  - performance of an RFI to determine the nature and extent of the presence of any release of hazardous wastes, hazardous constituents, and/or hazardous substances at or from the facility;

  - performance of a CMS to identify and to evaluate alternatives for the appropriate extent of corrective action necessary to prevent or to mitigate any migration of release of hazardous wastes, hazardous constituents, and/or hazardous substances at or from the facility; and

  - any CMI which is deemed necessary by the EPA to protect human health or the environment.

- Implement the work plans in an expeditious manner to protect human health and the environment.

State of Ohio Consent Decree

The State of Ohio Consent Decree is an agreement between the State of Ohio and DOE to ensure the safe and environmental sound handling of hazardous waste, mixed waste, polychlorinated biphenyl waste, solid waste, and water pollutants at Portsmouth Gaseous Diffusion Plant (PORTS).

These agreements contain 56 tasks and are related to remedial action activities required at the PORTS site. The deliverables and schedules are generally the same in both agreements. These agreements require performance per agreed upon site remedial action work plans. These work plans require that DOE assess, characterize, and remediate all waste units on the site and perform remediation of the air, surface water and sediment, soil, and groundwater contamination resulting from the waste units.

3.0 ORGANIZATION/MANAGEMENT

3.1 ORGANIZATION

Martin Marietta Energy Systems, Inc. (Energy Systems) is the management and operations contractor for the U.S. Department of Energy (DOE), the owner of the facility. As the managing contractor, Energy Systems manages the environmental, safety, and health (ES&H) programs at the site and supports DOE in management of the overall ES&H program. Both have direct responsibility for conducting Environmental Restoration (ER) activities.

DOE/Field Office (OR) has placed the management responsibility for all ER activities under the assistant manager for Environmental Restoration and Waste Management (AMERWM). An ER Division is organized within the AMERWM. The manager of the OR is the designated contracting officer representative (COR) for oversight of Portsmouth Gaseous Diffusion Plant (PORTS). A designated COR from the AMERWM is responsible for the PORTS Environmental Restoration Program (ERP) activities.

Within Energy Systems, there are many organizations with responsibility for the management, implementation, and conduct of the ER program activities. Total oversight of all ES&H activities, as well as interface roles on behalf of Energy Systems, is the responsibility of the environmental compliance director and a central staff organization reporting to the vice president of Compliance, Evaluations, and Policy. All oversight, policy, and regulatory interaction with Energy Systems is the responsibility of this organization. This organization has direct interface with the OR assistant manager for Safety and Environment and with AMERWM.

The Energy Systems organizational entity responsible for ER activities, which include remedial actions and decontamination and decommissioning (D&D), is the Energy Systems Environmental Restoration Division (ERD). The ERD is a centralized organization reporting to the Energy Systems vice-president for ER and Waste Management and is responsible for program management and implementation of ER activities for PORTS in Ohio; Paducah Gaseous Diffusion Plant in Kentucky; and Oak Ridge K-25 Site (K-25), Y-12 Plant (Y-12), Oak Ridge National Laboratory (ORNL), East Fork Poplar Creek (EFPC), and Clinch River in Tennessee. Responsibilities of the ERD also include programmatic implementation of remedial investigation and the technical and financial reporting. The OR organization responsible for implementation of ER activities is the ERD under the AMERWM. DOE-ERD interfaces with plant management at the site on activities for which DOE-ERD has implementation responsibility via a program manager, who is part of the DOE-ERD organization.

At the site, the ES&H organization is charged with ensuring that the site meets the goals of full compliance with all current regulations and anticipation of, participation in, and planning for the complying with future regulations. Although the organizational unit reports to the Energy Systems site manager, it also reports in a matrix manner to the central Environmental Compliance organization.

The Environmental Restoration Department of the ES&H Division was established at the site to implement and to manage the ERP. The mission and purposes of the Energy Systems ERP (ES ERP) are listed below.

- Manage the assessment, investigation, analysis, and specific closure activities.
- Reduce adverse risk to human health and environment and achieve regulatory compliance.
- Provide surveillance and maintenance of facilities after formal acceptance into the D&D Program and the D&D of surplus facilities that have been contaminated by radioactive and/or hazardous material so the facilities are safe from a radiological and/or hazardous material standpoint.
- Serve as the OR integrating contractor for all phases of the ERP as defined in the OR Program Management Plan. Program responsibility shall begin with the identification of an inactive remediation site [i.e. a RCRA regulated Solid Waste Management Unit (SWMU) which are areas where wastes are stored, treated, recycled, or regularly discharged and from which contamination may occur] and shall extend until removal of the subject site from the SWMU list or upon regulatory agreement that the site requires no further actions, as applicable. Program and project accountability by this department is accomplished within the umbrella of plant compliance oversight.

The ER Site Program Manager is responsible for planning and implementing ER activities at the site. The PORTS plant manager is responsible for staffing and supporting the PORTS ERP with central ERD involvement.

3.2 MANAGEMENT

The assigned technical personnel of the Energy Systems site environmental organization and the Central Environmental Restoration Program (ERP) coordinate the activities to be performed under the plan in a manner appropriate to the activities. Environmental Restoration (ER) activities are coordinated through the Energy Systems ERP organization that has the responsibility for program implementation at each site. The Central Environmental Compliance, ERP, and site staff work closely with the individual site

representatives to ensure that appropriate documentation is in place for activities conducted at each site.

The overall Energy Systems appraisal activities for Environment, Safety, and Health (ES&H) functions are the responsibility of the Energy Systems Quality organization. Technical and staff support for the appraisal activities is provided through Central Environmental Compliance. The Central Environmental Compliance organization and the site organizations perform audits and surveillance of ES&H activities at the sites.

Management of these activities include assurance that work to be done has been identified, planned, scheduled, and budgeted prior to authorization and that there is proper control over initiation of, or changes to, authorized activities. It also ensures appropriate scheduling, monitoring, and changes of milestones. Management provides for planned procurement and contracting activities, and realistic contingency planning. Performance is monitored through use of specialized procedures for collecting and reporting cost, schedule, earned value, and technical performance data.

4.0 ENVIRONMENTAL RESTORATION

4.1 OVERVIEW

The Portsmouth Gaseous Diffusion Plant (PORTS) Environmental Re toration Program (ERP) is responsible for identification, characterization, and remediation of solid waste management units, spill sites, and other suspected hazardous materials release sites associated with the construction and operation of the plant. The primary goal of the ERP is restoration of the site in compliance with conditions set forth in an Administrative Consent Order and Consent Decree. This was entered into by the U.S. Department of Energy (DOE) with the U.S. Environmental Protection Agency (EPA) and the State of Ohio, respectively. The state of Ohio's oversight role is managed by the Ohio Environmental Protection Agency (OEPA).

Site restoration is to occur following a methodology set forth under Section 3008(h) of the Resource Conservation and Recovery Act (RCRA). In addition, all ERP operations are conducted in compliance with all applicable environmental regulations and DOE Orders. Accordingly, the ERP is segregated into two major program areas:

1. Remedial Action (RA)
2. Decontamination and Decommissioning (D&D)

Assessment

The RA consists of the following list of activities.

1. The RCRA Facility Assessment (RFA), RCRA Facility Investigation (RFI), and Corrective Measures Study (CMS). The RFA examines the past and present operating practices of the plant to develop an understanding of where contamination of the site environment has occurred or is likely to have occurred.

2. This information forms the basis for the planning and conducting of a detailed RFI directed at quantifying and characterizing suspect areas.

3. Following the RFI, studies of candidate remedial technologies are conducted in CMSs to identify appropriate and cost-effective remedial alternatives that may be applied to problems areas identified during the RFI.

Throughout the investigation process, immediate threats to human health and the environment are "fast tracked" toward resolution through interim remedial measures (IRM).

Cleanup

Following the selection of a preferred remediation alternative, design and construction related to implementation of the appropriate corrective action will commence. The corrective measures investigation (CMI) phase of the ERP remediation of problem sites identified during the Assessment Phase will restore the area to the environmental condition specified by the EPA and the OEPA. The cleanup phase ends when the effectiveness of the remedy is certified by an independent authority.

Additionally, sites have been selected by the OEPA for immediate closure and remediation under the provision of RCRA. They are as follows:

- X-616 Chromium Sludge Lagoons,
- X-749 Contaminated Materials Disposal Facility,
- X-231B Oil Biodegradation Plot,
- X-701B Holding Pond and Retention Basins,
- X-744G (Unrestricted),
- X-744G (Restricted),
- X-744Y Storage Yard,
- X-740 Tank and Storage Unit,
- X-750 Hazardous Waste Tank,
- X-735 Hazardous Waste Landfill, and
- X-752 Container Storage Units.

For ERP purposes, the site is divided into four quadrants. This subdivision of the site is based in large part on groundwater flow. Each quadrant is addressed as a separate entity by the regulatory agencies. Therefore, each quadrant may progress throughout the RCRA process separately. Four complete sets of RCRA deliverables will be developed to document the ERP progress throughout the site.

D&D operations are responsible for vacating and removing site process buildings and facilities in an orderly and environmentally acceptable manner. Presently, the ERP D&D program is responsible for surveillance and maintenance of the Gas Centrifuge Enrichment Plant (GCEP) facilities while they are being salvaged and/or converted for other uses.

4.2 RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION /CORRECTIVE MEASURES STUDY/CORRECTIVE MEASURES INVESTIGATION (FY94 ADS: OR-6301) (FY93 ADS: OR-636)

4.2.1 Description

Quadrant I RCRA Facility Investigation (RFI)/ Correcrtive Measures Study(CMS)/ Corrective Measures Investigation (CMI) covers the RCRA Corrective Action Process requirements to conduct the RFI, CMS, and CMI for Quadrant I of the Portsmouth Gaseous Diffusion Plant (PORTS) site. Quadrant I covers the southern portion of the site.

4.2.2 Status of FY92 Site-Specific Plan Objectives

On February 19, 1991, the U.S. Environmental Protection Agency (EPA) and Ohio EPA (OEPA) approved the work plans for Quadrant I RFI. Field sampling for Quadrant I began a week later with the drilling of new wells to monitor or to test groundwater and the sampling of soil, surface water, and pond and stream sediments. Field work for this quadrant was completed on August 25, 1992. Environmental samples were collected during the RFI field work to determine the presence and type of contamination. The nature, extent, rate of movement, and direction of environmental contaminants were also defined. Any risks posed to human health or to the environment by a contaminant were determined. Draft reports summarizing the findings were submitted to the EPA and the OEPA in February 1992.

When the Quadrant I RFI report was completed in February 1992, work toward the CMS for this quadrant began. The CMS examines different cleanup methods for Quadrant I and how they may be used to address contamination found during the RFI phase. Quadrant I CMS Work Plan was submitted to EPA and OEPA in May 1992.

4.2.3 FY93 Objectives

Remedial alternatives identified in the Quadrant I CMS Work Plan will be evaluated to determine the most appropriate cleanup method or methods. Then a recommendation is made for a particular solid waste management unit (SWMU) in a report to the EPA and OEPA. During this step in the CMS phase, the public will be invited to comment on the recommended cleanup methods and participate in the final selections.

The development of the CMI Program Plan and Quadrant I CMI Work Plan will be initiated. These plans will include a schedule for preparing of design criteria and detailed engineering plans, specifications and construction drawings, as necessary to implement the

approved cleanup actions, and schedules for selection of contractors, commencement of work, and completion of work.

4.2.4 FY94-98 Objectives

Selected cleanup systems will be designed and constructed during the CMI. Once the cleanup action has been completed, the area will be maintained and monitored to ensure its effectiveness.

4.2.5 FY93 Scheduled Milestones

- Submit Quadrant I Draft CMS Report to EPA and OEPA. 03/93
- Submit Quadrant I Draft Final CMS Report to EPA and OEPA. 06/93
- Submit Quadrant I Final CMS Report to EPA and OEPA. 09/93

NOTE: All of the above milestones are contingent upon approval of the Draft RFI Report, which was submitted for EPA and OEPA approval in February 1992, and the CMS Work Plan, which was submitted for EPA and OEPA approval in May 1992.

4.2.6 FY93 Funding

ADS No.	$ X1000
6301	$1,622

4.3 QUADRANT II RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION/CORRECTIVE MEASURES STUDY/CORRECTIVE MEASURES INVESTIGATIONS (FY94 ADS: OR-6302) (FY93 ADS: OR-636)

4.3.1 Description

Quadrant II RCRA Facility Investigation (RFI)/ Correcrtive Measures Study(CMS)/ Corrective Measures Investigation (CMI) covers the Resource Conservation and Recovery Act (RCRA) Correction Action Process requirements to conduct the RFI, CMS, and CMI for Quadrant II of the Portsmouth Gaseous Diffusion Plant (PORTS) site. Quadrant II covers the eastern portion of the site.

4.3.2 Status of FY92 Site-Specific Plan Objectives

On February 19, 1991, the U.S. Environmental Protection Agency (EPA) and Ohio EPA (OEPA) approved the work plans for Quadrant II RFI. Field sampling began a week later with the drilling of new wells to monitor or test ground water and the sampling of soil, surface water, and pond and stream sediment. Field work for this quadrant was completed on August 25, 1992. Environmental samples and kind of contamination. The nature, extent, and rate of movement and direction of any environmental contaminants were also defined. Any risks posed by a contaminant to human health and the environment were determined. Draft reports summarizing the findings were submitted to the EPA and the OEPA in February 1992.

When the Quadrant II RFI report was completed in February 1992, the CMS for this quadrant began. The CMS examines different cleanup methods for Quadrant II and how they may be used to address contamination found during the RFI phase. The Quadrant II CMS Work Plan was submitted to EPA and OEPA in May 1992 for review and approval.

4.3.3 FY93 Objectives

Remedial alternatives identified in the Quadrant II CMS Work Plan will be evaluated to determine the most appropriate cleanup method or methods. The recommendation is made for a particular Solid Waste Management Unit (SWMU) in a report to the EPA and OEPA. During this step in the CMS phase, the public will be invited to comment on the recommended cleanup methods and participate in the final selections.

The development of the CMI Program Plan and Quadrant II CMI Work Plan will be initiated. These plans will include a schedule for preparing design criteria and detailed engineering plans, specifications, and construction drawings as necessary to implement the approved cleanup actions, and schedules for selection of contractors, commencement of work, and completion of work.

4.3.4 FY94-98 Objectives

Selected cleanup systems will be designed and constructed during the CMI. Once the cleanup action has been completed, the area is maintained and monitored to ensure its effectiveness.

4.3.5 FY93 Scheduled Milestones

- Submit Quadrant II Draft CMS Report to EPA and OEPA. 12/92
- Submit Quadrant II Draft Final CMS Report to EPA and OEPA. 03/93
- Submit Quadrant II Final CMS Report to EPA and OEPA. 06/93

NOTE: All of the above milestones are contingent upon approval of the Draft RFI Report, which was submitted for EPA and OEPA approval in February 1992, and the CMS Work Plan, which was submitted for EPA and OEPA approval in May 1992.

4.3.6 FY93 Funding

ADS No.	$ x 1000
6302	$1,480

4.4 QUADRANT III RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION/CORRECTIVE MEASURES STUDY/CORRECTIVE MEASURES INVESTIGATION (FY94 ADS: 6303) (FY93 ADS: OR-636)

4.4.1 Description

Quadrant III RCRA Facility Investigation (RFI)/ Correcrtive Measures Study(CMS)/ Corrective Measures Investigation (CMI) covers the RCRA Correction Action Process requirements at the Portsmouth Gaseous Diffusion Plant (PORTS) site. Quadrant III covers the western portion of the site.

4.4.2 Status of FY92 Site-Specific Plan Objectives

In May 1990, the Quadrant III RFI Work Plan and Description of Current Conditions were submitted to U.S. Environmental Protection Agency (EPA) and Ohio EPA (OEPA) for review and approval. Conditional approval of the Quadrant III RFI documents was granted on January 17, 1992. Conditions were accepted by DOE on February 10, 1992. Field sampling for Quadrant III began in April 1992 with the sampling of soil, surface water, and pond and stream sediments.

4.4.3 FY93 Objectives

The Quadrant III RFI will be completed, and a Draft RFI Report will be submitted to EPA and OEPA for review and comment. Upon receipt of EPA and OEPA comments, a Final RFI Report will be prepared and submitted for approval.

After submittal of the Quadrant III Draft RFI Report, the Quadrant III CMS Work Plan will be prepared and submitted to the EPA and OEPA for review and approval. Remedial

alternatives identified in the Quadrant III CMS Work Plan will be evaluated to determine the most appropriate cleanup method or methods. After alternatives are evaluated, a recommendation will be made for a particular Solid Waste Management Unit (SWMU) in a report to the EPA and OEPA. During this step in the CMS phase, the public will be invited to comment on the recommended cleanup methods and participate in the final selections.

The development of the CMI Program Plan and Quadrant III CMI Work Plan will be initiated. These plans will include a schedule for preparing design criteria and detailed engineering plans, specifications and construction drawings as necessary to implement the approved cleanup actions, and schedules for selection of contractors, commencement of work, and completion of work.

4.4.4 FY94-98 Objectives

Selected cleanup systems will be designed and constructed during the CMI. Once the cleanup action has been completed, the area is maintained and monitored to ensure its effectiveness.

4.4.5 FY93 Scheduled Milestones

- Submit Quadrant III Draft RFI Report to EPA and OEPA. 12/92
- Submit Quadrant III CMS Work Plan to EPA and OEPA. 03/93
- Submit Quadrant III Final RFI Report to EPA and OEPA. 05/93

NOTE: The submittal of the Quadrant III Final RFI Report is contingent upon approval of the Draft RFI Report which will be submitted for EPA and OEPA approval in December 1992.

4.4.6 FY93 Funding

ADS No.	$ x 1000
6303	$528

4.5 QUADRANT IV RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION/CORRECTIVE MEASURES STUDY/CORRECTIVE MEASURES INVESTIGATION (FY94 ADS: OR-6304) (FY93 ADS: OR-636)

4.5.1 escription

Quadrant IV RCRA Facility Investigation (RFI)/ Correcrtive Measures Study(CMS)/ Corrective Measures Investigation (CMI) covers the RCRA Correction Action Process requirements to conduct the RFI/CMS/CMI for Quadrant IV at the Portsmouth Gaseous Diffusion Plant (PORTS) site. Quadrant IV covers the northern portion of the site.

4.5.2 Status of FY92 Site-Specific Plan Objectives

In October 1990, the Quadrant IV RFI Work Plan and Description of Current Conditions were submitted to the U.S. Environmental Protection Agency (EPA) and Ohio EPA (OEPA) for review and approval. EPA and OEPA comments were received in January 1992. A revised Quadrant IV RFI Work Plan was submitted in March 1992 for review and approval.

4.5.3 FY93 Objectives

The Quadrant IV RFI will be completed, and a Draft RFI Report will be submitted to EPA and OEPA for review and comment. Upon receipt of EPA and OEPA comments, a Final RFI Report will be prepared and submitted for approval.

After submittal of the Quadrant IV Draft RFI Report, the Quadrant IV CMS Work Plan will be prepared and submitted to the EPA and OEPA for review and approval. Remedial alternatives identified in the Quadrant IV CMS Work Plan will be evaluated to determine the most appropriate cleanup method or methods. Then a recommendation will be made for a particular Solid Waste Management Unit (SWMU) in a report to the EPA and OEPA. During this step in the CMS phase, the public will be invited to comment on the recommended cleanup methods and participate in the final selections.

The development of the CMI Program Plan and Quadrant IV CMI Work Plan will be initiated. These plans will include a schedule for preparing design criteria and detailed engineering plans, specifications and construction drawings as necessary to implement the approved cleanup actions, and schedules for selection of contractors, commencement of work, and completion of work.

4.5.4 FY94-98 Objectives

Selected cleanup systems will be designed and constructed during the CMI. Once the cleanup action has been completed, the area is maintained and monitored to ensure its effectiveness.

4.5.5 FY93 Scheduled Milestones

- Submit Quadrant IV Draft RFI Report to EPA and OEPA. 04/93
- Submit Quadrant IV Final RFI Report to EPA and OEPA. 07/93
- Submit Quadrant IV CMS Work Plan to EPA and OEPA. 07/93

NOTE: All of the above milestones are contingent upon approval of the revised Quadrant IV RFI Work Plan, which was submitted for EPA and OEPA approval in March 1991.

4.5.6 FY93 Funding

ADS No.	$ x 1000
6304	$4,526

4.6 CLOSURES (FY94 ADS: OR-6305) (FY93 ADS: OR-613)

4.6.1 Description

This activity consists of closing six sites at Portsmouth Gaseous Diffusion Plant (PORTS) as follows:

- X-231B Biodegradation Plot,
- X-616 Chromium Sludge Lagoons,
- X-701B Holding Ponds,
- X-749A Classified Materials Disposal Facility,
- X-749 North Contaminated Materials Disposal Facility, and
- X-749 South Contaminated Materials Disposal Facility.

The scope of closure for each unit varies and ranges from:

- the installation of an engineered cap,
- exhumation and treatment of waste,
- installation of a groundwater isolation system and groundwater recovery/treatment system, and
- stabilization and storage of waste.

Closure activities are specified by closure plans for each site, in addition to closure option studies (COS) for X-231B, X-701B, and X-749 North. The scope also includes movement of boxed sludges generated by remedial activities for X-701B to a permitted Resource Conservation and Recovery Act (RCRA) storage facility and an interim remedial measure (IRM), which included the installation of a plume interceptor trench and the subsequent treatment of collected groundwater.

4.6.2 Status of FY92 Site-Specific Plan Objectives

The X-231B Biodegradation Plot closure plan and COS were submitted and approved by the Ohio Environmental Protection Agency (OEPA). A technology demonstration for soil remediation has been completed, with a written report in progress, and construction of a groundwater pump and treatment facility completed in March.

The X-616 Chromium Sludge Lagoons closure plan was approved by OEPA for the removal and treatment of sludge from X-616 and its placement in the X-735 landfill. Monocells were constructed, filled, and closed in accordance with an approved Permit to Install. The X-616 closure was completed. Based upon groundwater monitoring data, a revised closure plan was requested, submitted, and approved by OEPA.

The X-701B Holding Ponds closure plan was submitted and approved by OEPA. Sludge removal, treatment, dewatering, and boxing were completed. Designs for the groundwater extraction system, water treatment facility, and multilayer cap have been initiated. The COS was submitted to OEPA and approved. Backfilling of two retention basins was completed in June 1992.

An emergency action plan was completed to intercept the contaminant plume from the X-701B Holding Pond. A groundwater intercept trench was constructed, and a temporary ground water treatment facility was installed. Construction of a second intercept trench was initiated.

The X-749A Classified Materials Disposal Facility closure plan has been approved by OEPA. Design of a multilayer cap will be in progress during FY92.

The X-749 North Contaminated Materials Disposal Facility closure plan and COS were submitted and approved by OEPA. The slurry wall and subsurface drains were installed, and contaminated groundwater was piped to a temporary groundwater treatment facility. Cap construction has been modeled with test pads. The multilayer cap construction has been initiated and will be completed in June 1992.

The X-749 South Contaminated Materials Disposal Facility closure plan has been approved by OEPA. Cap construction was modeled with test pads. Below cap fill has been constructed and completion will be accomplished in FY92.

4.6.3 FY93 Objectives

Technology gained from the Technical Demonstration for in situ remediation of soils and a low permeability cap will be installed at the X-231B Biodegradation Plot. Soils remediation alternatives (the contingent closure option) will be implemented. Certification for closure activities will be completed.

The soils remediation alternative based on technology gained from the Technical Demonstration for in situ remediation will be implemented at the X-701B Holding Ponds. Construction of the groundwater pump and treatment facility and groundwater extraction wells will be completed and placed in operation.

Construction of a multilayer low permeability cap system will be completed at the X-749A Classified Materials Disposal Facility. Certification for closure activities will be completed at this site.

4.6.4 FY94-98 Objectives

Excavated soils from the X-701B Holding Ponds will be treated. A cap system will be constructed, and certification for closure activities will be completed at this site.

4.6.5 FY93 Scheduled Milestones

- Complete closure of the X-749A Classified Materials Disposal Facility. 04/93
- Complete closure of the X-701B Holding Ponds. 08/93

4.6.6 FY93 Funding

ADS No.	$ X 1000
6305	$16,803

4.7 GROUNDWATER PROTECTION PROGRAM (FY94 ADS: OR-6306) (FY93 ADS: OR-637)

4.7.1 Description

This activity coordinates and supports ongoing work under Environmental Compliance and other Environmental Restoration (ER) projects related to groundwater protection at Portsmouth Gaseous Diffusion Plant (PORTS). As the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) characterization studies and RFI reports are completed, additional sampling to monitor the rate and extent of any plume migration will be required. After Corrective Measures Investigation (CMI) activities are completed, custody of some monitoring wells will transfer to the facility groundwater protection program. The repair, replacement, and eventual plugging and abandoning of wells will be required. In addition, support is required for continuing development and modification of a ground water flow and transport model, and related graphics and visualization capabilities for use in the evaluation support of interim remedial measures (IRMs) and CMI plans. Treatment facilities will be required to remove hazardous chemicals from extracted groundwater.

IRMs will be required if any facility or plume is determined to represent an imminent threat to human health or to the environment. In the event Department of Energy (DOE) identifies a current or potential threat to human health or the environment, PORTS shall immediately notify the U.S. Environmental Protection Agency (EPA) and Ohio EPA (OEPA). If directed by the EPA and OEPA, an Interim Measures Plan (IMP) will be prepared that identifies the IRMs which mitigate this threat and that is consistent with and integrated into any long term response action at PORTS. The approved IMP shall be incorporated into the EPA Administrative Consent Order and the State of Ohio Consent Decree.

4.7.2 Status of FY92 Site-Specific Plan Objectives

Two French drains and the X-624 Groundwater Pump and Treatment (GWP&T) Facility have been constructed to intercept and treat a trichloroethylene (TCE) contaminated groundwater plume emanating from the X-701B Holding Pond and discharging into Little Beaver Creek. An IRM plan has been approved by EPA and OEPA to remediate the X-608 Well 6B, and National Environmental Policy Act documentation is pending approval.

4.7.3 FY93 Objectives

The X-624 GWP&T Facility will be maintained and operated. The EPA- and OEPA-mandated remediation of mercury contaminated well 6B in the X-608 Wellfield will be

performed. Quarterly sampling and analysis of RFI wells will be performed. Wells to capture the TCE plume emanating from X-231B and discharging into the X-230K will be installed.

4.7.4 FY94-98 Objectives

The X-624 GWP&T Facility will be maintained and operated. Sampling and analysis of wells will be performed to assess the performance of the IRMs and to determine the migration rate and extent of RFI identified plumes. Plugging and abandonment and replacement of damaged monitoring wells, as well as preventive maintenance of all monitoring wells, will be necessary. Extraction wells down-gradient from X-231B and X-749 will be installed to intercept groundwater plumes moving off-site. A conveyance main from each IRM area to the X-622 GWP&T Facility will also be installed.

4.7.5 FY93 Scheduled Milestones

Ongoing milestones include:

- Perform routine sampling of monitoring wells on a quarterly basis.

4.7.6 FY93 Funding

ADS No.	$ x 1000
6306	$1,638

4.8 UNDERGROUND STORAGE TANKS/ABOVEGROUND STORAGE TANKS (FY94 ADS: OR-6307) (FY93 ADS: OR-610)

4.8.1 Description

Underground storage tanks (USTs) older than 25 years or out of service more than two years will be closed. Any existing tanks which are not upgraded to meet current regulations will be closed. If any USTs are found to be leaking, immediate response actions will be taken followed promptly by contamination cleanup, accompanied by closure if necessary. Currently, there are three inactive USTs at Portsmouth Gaseous Diffusion Plant (PORTS) which must be removed by Environmental Restoration (ER).

Remediate seven inactive aboveground storage tanks (ASTs) as required by the "Aboveground Storage Tank Corrective Action Implementation Plan" which has been submitted to Ohio Environmental Protection Agency (OEPA) and approved.

4.8.2 Status of FY92 Site-Specific Plan Objectives

Four USTs were removed during FY91. The sites were sampled and characterized. Any contaminated soils were removed to below method detection limits or background levels. Contaminated soils are being treated with microbes to enhance bioremediation before landfilling operation.

4.8.3 FY93 Objectives

No activities are planned for FY93.

4.8.4 FY94-98 Objectives

Design, procure, and demolish three inactive USTs and seven inactive ASTs. Perform soil characterization and remediation, if necessary, at each site.

4.8.5 FY93 Scheduled Milestones

No activities are planned for FY93.

4.8.6 FY93 Funding

ADS No.	$ x 1000
6307	$0

4.9 OTHER CONSENT DECREE (FY94 ADS: OR-6308) (FY93 ADS: OR-626)

4.9.1 Description

Provide Resource Conservation and Recovery Act (RCRA) Part B Hazardous and Mixed Waste Storage space in the X-7725 Gaseous Centrifuge Environment Plant (GCEP) Recycle/Assembly Building. Modification to the existing building will be required to meet

RCRA Part B standards for permitted hazardous waste storage facilities. The project will provide approximately 243,000 sq ft of usable floor space.

4.9.2 Status of FY92 Site-Specific Plan Objectives

Preliminary costs and schedules have been prepared. Design, baseline schedule, and security/foreign organization conflict-of-interest funding have been completed. Demolition package #1, Construction Areas B and G, and Process Building #1 floor repairs have been completed. Autoclaves and other equipment have been moved.

4.9.3 FY93 Objectives

Complete construction and finish certification.

4.9.4 FY94-98 Objectives

No activities planned beyond FY93.

4.9.5 FY93 Scheduled Milestones

- Complete construction and finish certification. 02/93

4.9.6 FY93 Funding

ADS No.	$ x 1000
6308	$3,011

4.10 RESOURCE CONSERVATION AND RECOVERY ACT CLOSURES (FY94 ADS: OR-6309) (FY93 ADS: OR-614)

4.10.1 Description

Closure is required of the:

- X-750 Tank,
- X-740 Tank,
- X-740 Storage Facility,
- X-744 Storage Yard,

- X-735 Sanitary Landfill (northern portion),
- X-744G (Restricted Area) Hazardous Waste Storage Facility,
- X-744G (Unrestricted Area) Hazardous Waste Storage Facility, and
- X-752 Hazardous Waste Storage Facility.

The scope of closure for each unit varies and will be determined by the closure plans for each unit as approved by the Ohio Environmental Protection Agency (OEPA).

4.10.2 Status of FY92 Site-Specific Plan Objectives

Closure plans for all units were submitted to OEPA for review and approval. Preliminary cost estimates and schedules have been prepared for all units based on regulatory conditions and historical information concerning the RCRA units to be closed and past costs for closing similar units.

4.10.3 FY93 Objectives

Initiate closure on the:

- X-744G (Restricted Area) Hazardous Waste Storage Facility,
- X-744G (Unrestricted Area) Hazardous Waste Storage Facility,
- X-744 Storage Yard, and
- X-735 Sanitary Landfill.

Complete closure on the:

- X-750 Tank,
- X-740 Tank,
- X-740 Storage Facility,
- X-752 Hazardous Waste Storage Facility,
- X-744G (Restricted Area) Hazardous Waste Storage Facility, and
- X-744G (Unrestricted Area) Hazardous Waste Storage Facility.

4.10.4 FY94-98 Objectives

Complete construction on X-735 Sanitary Landfill (northern portion) and the X-744 Storage Yard.

4.10.5 FY93 Scheduled Milestones

- Certify X-750 Tank Closure. 04/93
- Certify X-740 Tank Closure. 04/93
- Certify X-740 Facility Closure. 04/93
- Certify X-744G(U) Facility Closure. 07/93
- Certify X-744G(R) Facility Closure. 07/93
- Certify X-752 Facility Closure. 07/93

NOTE: The above milestones are contingent upon OEPA approval of the facility Closure Plans.

4.10.6 FY93 Funding

ADS No.	$ x 1000
6309	$16,500

4.11 PROGRAM MANAGEMENT (FY94 ADS: OR-6501) (FY93 ADS: OR-636)

4.11.1 Description

Core staff will be maintained as well as any direct-charge engineering support or waste management assistance to the Portsmouth Gaseous Diffusion Plant (PORTS) Environmental Restoration Program (ERP). Specific activities include development and maintenance of integrated program schedules, program budget preparation and submission, management reporting, program control, technical data management, work authorization system development and maintenance, and conduct of special ad hoc program-wide projects.

4.11.2 Status of FY92 Site-Specific Plan Objectives

Management control/work authorization system development, development of integrated program schedules, preparation of Environmental Restoration (ER) Waste Management Plan, and development and implementation of technical data management system/geographic information system compliant with requirements of Oak Ridge Environmental Information System.

4.11.3 FY93 Objectives

Maintenance of integrated program schedules, program budget preparation and submission, management reporting, program control, technical data management, work authorization system development and maintenance, and conduct of special ad hoc program-wide projects.

4.11.4 FY94-98 Objectives

Maintenance of integrated program schedules, program budget preparation and submission, management reporting, program control, technical data management, work authorization system development and maintenance, and conduct of special ad hoc program-wide projects.

4.11.5 FY93 Scheduled Milestones

- Submit FY95 ADSs to DOE/HQ for approval. 04/93
- Submit FY94 Current Year Work Plans to DOE/HQ for approval. 07/93

4.11.6 FY93 Funding

ADS No.	$ x 1000
6501	$4,008

4.12 GASEOUS CENTRIFUGE ENRICHMENT PLANT TERMINATION, SURVEILLANCE, AND MAINTENANCE (FY94 ADS: OR-6701) (FY93 ADSs: OR-615, OR-625)

4.12.1 Description

Scope includes Gaseous Centrifuge Enrichment Plant (GCEP) termination and caretaker of standby activities associated with GCEP termination. For FY93, there are no GCEP Termination activities.

Included are the following:

- GCEP surveillance and maintenance caretaker activities, such as maintaining sprinkler systems and fire protection;
- maintaining steam plant operations;
- conducting surveillance and maintenance of facilities;

- maintaining security; and
- monitoring.

The following facilities require ongoing maintenance and surveillance through 1998:

- X-3012 Process Support Building (PSB) (56,243 sq ft),
- X-3001 Process Building (303,680 sq ft),
- X-7727H Transfer Corridor (24,246 sq ft),
- X-3346 F/W Building (167,236 sq ft),
- X-1007 AV Southeast Portal, and
- X-2207F F/W Portal.

The Process Building and the PSB are planned for turnover to Defense Logistics Associates once the bankruptcy case is settled. This will reduce the maintenance and surveillance requirements.

4.12.2 Status of FY92 Site-Specific Plan Objectives

GCEP surveillance and maintenance are performed as follows:

- maintain sprinkler systems and fire protection,
- maintain utilities operations,
- conduct surveillance and maintenance of facilities, and
- maintain security and monitoring.

4.12.3 FY93 Objectives

GCEP surveillance and maintenance will be performed as follows:

- maintain sprinkler systems and fire protection,
- maintain utilities operations,
- conduct surveillance and maintenance of facilities, and
- maintain security and monitoring.

4.12.4 FY94-98 Objectives

GCEP termination activities will be performed as follows:

- restart the General Service Administration/Reportable Excessive Automated Property System activity following the delay in FY91-93;
- continue cleanout of the facilities, including the removal of contaminated and classified equipment;

- perform a minimal disassembly of centrifuge machines and associated support equipment;
- ship partially disassembled equipment to Oak Ridge for storage and future decontamination and declassification;
- remove classified components of machine and support equipment spare parts at the site; and
- sell remaining equipment as scrap.

GCEP surveillance and maintenance will be performed as follows:

- maintain sprinkler systems and fire protection,
- maintain utilities operations,
- conduct surveillance and maintenance of facilities, and
- maintain security and monitoring.

4.12.5 FY93 Scheduled Milestones

No scheduled milestones. All levels of effort apply to surveillance and maintenance.

4.12.6 FY93 Funding

ADS No.	$ x 1000
6701	$2,360

4.13 SURPLUS FACILITIES DEMOLITION (FY94 ADS: OR-6702) (FY93 ADS: OR-628)

4.13.1 Description

This activity provides demolition and removal of structures, utilities, contaminated soil, equipment, etc., that are associated with the X-705 Radicator (Incinerator) and the X-326 old High Assay Sampling Area (HASA).

4.13.2 Status of FY92 Site-Specific Plan Objectives

Pre-conceptual engineering costs estimates have been prepared in prior fiscal years. No activities are scheduled.

4.13.3 FY93 Objectives

No activity scheduled.

4.13.4 FY94-98 Objectives

Design the demolition and removal of structures, utilities, contaminated soil, equipment, etc., associated with the X-705 Radicator and X-326 old HASA. Complete procurement, bid and award, security clearance, and construction for X-705 Radicator demolition and removal. Complete procurement, bid and award, and construction for X-326 old HASA demolition and removal.

Lessons learned from facility characterization, decontamination, dismantlement, and material disposition activities will be used as inputs to the Deactivation, Decommissioning, and Recycle demonstrations and projects.

4.13.5 FY93 Scheduled Milestones

No activities scheduled.

4.13.6 FY93 Funding

ADS No.	$ x 1000
6702	$0

4.14 SURVEILLANCE AND MONITORING (FY94 ADS: OR-6801) (FY93 ADS: None)

4.14.1 Description

Surveillance and monitoring at closure sites and interim remedial measures (IRM) sites consists of closure cap and IRM inspection and maintenance, and operation and maintenance of Groundwater Pump and Treat (GWP&T) facilities built in support of post-closure activities. Closure cap and IRM site maintenance consists of the necessary site inspections and maintenance including grass mowing, erosion control, and boundary fence maintenance. Operation of GWP&T facilities includes the manpower necessary to operate the facility, all required filters, and personal protection equipment as well as the waste management personnel to store and to inspect hazardous waste generated during this activity.

4.14.2 Status of FY92 Site-Specific Plan Objectives

No activities are planned for FY92.

4.14.3 FY93 Objectives

Maintain and operate the X-622 GWP&T Facility which is to treat the contaminated ground water associated with the X-749 and X-231B Closures and the X-749 and X-231B IRM.

Maintain and operate the X-623 GWP&T Facility which is to treat the contaminated ground water associated with the X-701B Holding Pond Closure.

Inspect and maintain cap activities including grass mowing, erosion control, and boundary fence maintenance for the X-749 site.

4.14.4 FY94-98 Objectives

Maintain and operate the X-622 GWP&T Facility which is to treat the contaminated groundwater associated with the X-749 and X-231B Closures and the X-749 and X-231B IRM.

Maintain and operate the X-623 GWP&T Facility which is to treat the contaminated groundwater associated with the X-701B Holding Pond Closure.

Inspect and maintain cap activities including grass mowing, erosion control, and boundary fence maintenance.

4.14.5 FY93 Scheduled Milestones

No scheduled milestones, activities, or level of effort.

4.14.6 FY93 Funding

ADS No.	$ x 1000
6801	$1,230

5.0 TECHNOLOGY DEVELOPMENT

5.1 OVERVIEW

A technology evaluation and screening was initiated in November 1990 to address long-term release of soil volatile organic compounds into the ground water at the X-231B Biodegration Plot, a Resource Conservation Recovery Act (RCRA) regulated unit (RU). This RU encompasses approximately 0.8 acres and was used from 1976 to 1983 for treatment and disposal of waste oils and degreasing solvents. Existing site characterization data revealed that volatile organic compounds contamination occurred in the unit's silts and clays to a depth of approximately 25 feet. The primary volatile organic compounds were trichloroethylene and 1,1,1-trichloromethane. The overall goal of the initial evaluation and screening is to provide input to a Technology Demonstration Project that will successfully demonstrate one or more technologies for effective treatment of the contaminated soils beneath the X-231B RU at Portsmouth Gaseous Diffusion Plant.

5.2 ACCOMPLISHMENTS

Phase 1 — the initial evaluation and screening was completed in 1991 and listed six technology options that could be pursued in Phase 2 of the project.

Phase 2 — a field Technology Demonstration was completed in May 1992 and a report issued.

Other Projects

A project was initiated that addresses the on-site treatment of volatile organic compound contaminated soils (approximately 4,000 cubic yards) currently in RCRA storage on site. The soils are also contaminated with low levels of radionuclides, including uranium-235 and technetium-99. The soils will be treated using a technology yet to be defined, although thermal treatment is the standard for such soils. Treatability studies will be completed before selecting a treatment technology.

6.0 COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) requires review of actions at federal facilities for assessment of potential environmental impacts.

The review process for U.S. Department of Energy (DOE) actions results in a categorical exclusion (CX), the preparation of an environmental assessment (EA), or the preparation of an environmental impact statement (EIS). Only designated personnel at DOE can determine the appropriate level of documentation and authorize proceeding. Energy Systems personnel must review all proposed actions and provide the necessary technical information (and recommendations for the level of NEPA documentation, if appropriate) to DOE for review and determination.

As new actions are identified, it is important to review and prepare the appropriate requests for NEPA determinations and to track and ensure implementation of every commitment made in NEPA documents. Three basic steps are involved in the NEPA review process.

All Environmental Restoration activities must be reviewed. If the review indicates that action is appropriate for categorical exclusion as described in Subpart D of the DOE NEPA Implementing Procedures (or the DOE approved categorical exclusion list for plant maintenance), then a CX recommendation is prepared for DOE approval. If the proposed action is not categorically excluded, then an EA or an EIS must be prepared. This determination is based on whether or not the proposed action is listed in Subpart D or an Action Description Memorandum that is submitted to DOE environmental restoration. If an EA is required, DOE will review the EA and either issue a Finding of No Significant Impact or request an EIS. If an EIS is required, the NEPA process is completed with the issuance by DOE of a Record of Decision.

Although many of the other environmental statues have unique requirements, coordinating their review requirements with NEPA compliance will avoid delays that can be caused by proceeding separately under each statute.

A Portsmouth Gaseous Diffusion Plant (PORTS) project review is completed for all activities including environmental restoration, engineering, and maintenance activities. The Environmental Control Department in the Environmental Safety and Health Division is responsible for coordinating the NEPA documentation and review process. The following guidance is followed for implementation at PORTS:

- DOE Order 5440.1D, NEPA Compliance Program, dated February 22, 1991.
- DOE NEPA Implementing Procedures; 57 FR 15144, (1992).

- DOE Field Office, Oak Ridge, Implementation of Environmental and Waste Management National Environmental Policy Act Activities, February 1992.

6.1 ACTIONS RELATIVE TO NEPA

In addition to the existing NEPA documentation for activities involving CERCLA, RCRA, DOE Orders and other ongoing actions, additional NEPA documentation to support future activities is scheduled for submission during FY93.

Table 2. NEPA Documents in Preparation or Planned Fiscal Year 1993

Level of document*	Project name/description	Scheduled Submission
	Portsmouth Gaseous Diffusion Plant	
EISD/EIS	Quadrant I CMS EIS	March 19, 1993
EISD/EIS	Quadrant II CMS EIS	March 19, 1993
EISD/EIS	Quadrant IV CMS EIS	April 15, 1993
CX, B6.1	Groundwater Protection Program Quarterly Sampling	March 30, 1993

*Legend

CX Categorical Exclusion
EIS Environmental Impact Statement
EISD Environmental Impact Statement Determination

7.0 REPORTING AND DATA MANAGEMENT

7.1 REQUIRED REPORTS

The listing of environmental restoration reports routinely submitted by Energy Systems to the U.S. Department of Energy (DOE) and federal and state regulatory agencies is as follows:

- Environmental Restoration Program Monthly Technical Progress Report issued monthly to DOE, Environmental Protection Agency (EPA), and Ohio EPA, 10th of each month, and

- National Environmental Policy Act Summary Report for the Environmental Restoration (ER) Program issued monthly to DOE, 5th of each month.

7.2 MAINTENANCE OF RECORDS

The reports identified in Section 7.1 have been designated as Quality Records at Portsmouth Gaseous Diffusion Plant (PORTS). All Quality Records are maintained according to the requirements of Section 17.0 of PORTS Quality Assurance Manual. The records, along with their storage and retention requirements, have been identified or will be identified in project documentation.

All documents considered or relied on in developing a Record Of Decision specifying a particular response action at the site (Administrative Record) will be maintained at the site for a period not less than 20 years after the Record of Decision is posted. One copy of the Administrative Record will be made available at an information repository near the facility for public review.

All contractor records and information generated during the course of a study will be maintained with one copy at a secure location accessible to authorized parties. All original data and information will be maintained indefinitely at the site. All analytical raw data will be archived indefinitely at the PORTS site.

The applicable design specifications, procurement documents, test procedures, operational procedures, or other project documents will specify the records to be generated, supplied, or maintained by, or for, Energy Systems.

Documents designated to become records will be legible, accurate, and completed appropriate to the work accomplished. The records will be indexed in a system which includes as a minimum, record retention times and location of the record within the record management system. Records and/or indexing system(s) will provide sufficient information

to permit identification between the record and the item(s) or activity(ies) to which it applies.

Records will be stored in a manner approved by the organization responsible for storage. The method of storage will be such that it precludes deterioration and provides for the safekeeping of the records. Storage systems will provide for retrieval of information in accordance with the need of the responsible organization.

7.3 MAINTENANCE OF SAMPLES

Chain of custody procedures are required by state and federal regulatory agencies having jurisdiction over plant discharges, off-site waste shipments, and onsite disposal activities. It is the responsibility of the Environmental and Waste Management Organizations to assure compliance with the chain of custody procedure as well as the Plant Laboratory. Responsible personnel must handle samples in accordance with this procedure and inform supervision of any circumstance which could result in noncompliance. This procedure outlines the actions that must be taken to establish the documentation necessary to trace sample possession and handling from the time of collection through its analysis, and the subsequent introduction of the sample or its derived data as evidence in legal proceeding should that need arise. (Reference ESH-E-505 Environmental Control Procedure.)

Maintenance of samples collected during the course of waste management and corrective activities and all phases of the Environmental Restoration (ER) Program will be in accordance with the Energy Systems Environmental Surveillance Procedures Quality Control Program. Preservation methods are generally limited to chemical and thermal stabilization, pH control and protection from contamination and/or cross-contamination. Combinations of these methods are often used for preservation of the sample.

Samples are normally archived until analytical results are verified and validated in accordance with established protocols and procedures.

8.0 QUALITY ASSURANCE

The Quality Assurance (QA) Program at Portsmouth Gaseous Diffusion Plant (PORTS) is documented in the site QA Manual and addresses the requirements of ANSI/ASME NQA-1. The PORTS QA program is expanded upon in the Environmental Restoration Program (ERP) QA Program Plan and in QA Project Plans which cover specific work elements within the ERP. These documents provide the framework for implementation of DOE Order 5700.6C "Quality Assurance" and for the requirements of the U.S. Environmental Protection Agency (EPA) QA Management Staff. The site level manual defines the QA program which is applied to all activities on site that affect the quality of items and services. The areas affected and corresponding procedures numbers contained in the manual are identified below.

Technical procedures governing activities which affect quality are being identified, documented and approved in accordance with the requirements of PORTS-QAS.5.0 "Instructions, Procedures, and Drawings." Preparation, review, approval, and control of procedures which define and document activities affecting quality will be performed in accordance with written procedures.

Design control for Environmental Restoration projects is described in PORTS-QAS 3.0. This document addresses:

- design inputs,
- the design process,
- design analysis,
- design verification,
- design reviews,
- alternate calculations,
- qualification testing,
- change control,
- interface control,
- documentation, and
- records.

Test control is delineated in PORTS-QAS.11.0. This standard defines and establishes the requirements for item testing. Elements covered include:

- test plans,
- test procedures,
- test results,
- acceptance criteria, and
- test records.

The audit and surveillance activities associated with Environmental Restoration (ER) are being accomplished in accordance with the requirements of PORTS-QAS.18.0. More specifically, the procedures to be followed are PORTS-QAP.18.2 and PORTS-QAP.18.3. Auditing is being done by auditors who have been or will be certified by Energy Systems to conduct quality assurance audits to ANSI/ASME NQA-1 standards. Nonconformances identified by audits will be addressed and tracked to resolution according to the Corrective Action System procedure PORTS-QAP.16.2.

Standard PORTS-QAS.6.0 is the document which defines the Document Control System in place at the site. The system provides for:

- identification,
- preparation,
- review,
- approval,
- issuance,
- record filing, and
- change control for documents covered by the system.

For each ER project, the documents to be controlled will be identified in the project documentation. Procedures, plans, design bases, and reports are examples of documents that may be controlled on a given project.

Purchased items and services that have the potential to cause health, safety, environmental, production, or schedule concerns will be controlled according to PORTS-QAS.7.0 to assure their conformance to the requirements of their ER project. Such control provides for:

- procurement planning,
- supplier/subcontractor selection,
- bid evaluation, and
- vendor performance verification/evaluation.

Inspections conducted on items related to ER projects will be performed in accordance with PORTS-QAS.10.0. Items subject to inspection will be addressed in an inspection plan which specifies:

- critical features,
- acceptance criteria,
- procedures,
- controlled conditions,
- inspection and test equipment,
- special training,

- nonconformance handling, and
- records.

Procedure PORTS-QAS.12.0 covers the topic of Control of Measuring and Test Equipment which is the standard under which instrumentation is calibrated and controlled. Applicable instruments will be controlled, calibrated at specified periods, and adjusted to maintain accuracy within necessary limits. Instruments to be placed in the calibration system will be identified in the project documentation.

Processes affecting quality of items, materials and services shall be identified for each ER project in the project documentation. These processes will be controlled according to PORTS-QAS.9.0. All such processes shall be controlled by instructions, procedures, drawings, checklists, and/or other means.

QA records requirements are defined by PORTS-QAS.17.0. This standard controls the:

- generation,
- identification,
- validation,
- classification,
- storage,
- retrieval, and
- disposition of records which furnish documentary evidence of quality.

The quality records to which this standard apply will be defined for each ER project documentation.

9.0 FEDERAL, STATE, AND LOCAL INTERACTIONS

The U.S. Environmental Protection Agency (EPA) Administrative Consent Order (ACO) is an agreement between the EPA and the U.S. Department of Energy (DOE) to ensure compliance under Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), as amended, and 42 U.S.C. Section 6928(h) and 106(a) of the Comprehensive Environmental Response Compensation Liability Act (CERCLA) as of 1980. Entering into this agreement, the mutual objectives of the EPA and DOE are as follows:

- To perform interim remedial measures sufficient to prevent any release of hazardous waste, hazardous constituents, and/or hazardous substances from the facility, including, but not limited to, a Groundwater Quality Assessment of four RCRA-regulated sites, a trichloroethylene removal and control plan at the X-701B facility, a plume intercept project at the Little Beaver Creek, remediation of Well 6B, and plume containment at the X-231B Biodegradation Plot.

- To prepare work plans for:

  - performance of a RCRA facility investigation to determine fully the nature and extent of the presence of any release or the potential for future releases of hazardous wastes, hazardous constituents, and/or hazardous substances at or from the facility;

  - performance of a corrective measures study to identify and evaluate alternatives for the appropriate extent of corrective action necessary to prevent or mitigate any migration of release of hazardous wastes, hazardous constituents, and/or hazardous substances at or from the facility; and

  - any corrective measures investigation which is deemed necessary by the EPA to protect human health or the environment.

- To implement the work plans in an expeditious manner to protect human health and the environment.

The State of Ohio Consent Decree (CD) is an agreement between the State of Ohio and DOE to ensure the safe and environmentally sound handling of hazardous waste, mixed waste, process support building, solid waste, and water pollutants at Portsmouth Gaseous Diffusion Plant (PORTS). The CD contains approximately 56 tasks related to remedial action activities required at the PORTS site and generally follow the same objectives as the EPA ACO covered above.

Environmental Restoration Program (ERP) personnel meet with the EPA, Ohio EPA (OEPA), and DOE bi-monthly to discuss technical progress and milestones for completion of Environmental Restoration Projects and Tasks as required by the ACO and CD.

Informational newsletters and public meetings aid in keeping the local public informed of the status and the results of environmental investigations at PORTS, via the ERP Community Relations Plan developed by DOE/PORTS site personnel. On May 28, 1992, a Public Meeting was held at the Vern Riffs Vocational School. Status of cleanup activities, findings to date, and planned environmental restoration projects at PORTS were presented. Time was allotted for the public to ask questions, followed by a breakout session at topic tables for further questions and discussion. During the remainder of FY92, workshops to discuss air monitoring, National Pollutant Discharge Elimination System (NPDES), and radon emissions at the plant are planned. The next public meeting is planned for November 1992.

The Environmental Advisory Committee was established in December 1985 to review, analyze, and make recommendations on environmental issues facing PORTS. Individuals with varying expertise and technical backgrounds comprise the committee (environmental consultants, technical/professors of education, geologist, attorney, etc.) In keeping with its responsibilities to the public under its charter, the committee has held news conferences and made specific recommendations to the DOE contractor. The committee has spent time devoted to reviewing environmental issues and documents. All documents have been made available to the public. The committee has monitored the Ohio CD and the EPA ACO. They have met with the OEPA to review agency requirements and Martin Marietta Energy Systems' responsiveness and enhanced communications.

APPENDIX A

GLOSSARY

GLOSSARY

Action Plan. A plan describing specific cleanup or Corrective Activity.

Ambient. Surrounding.

Aquifer. A geologic formation or structure that is capable of yielding water in usable quantities.

Assay. Determination of the components of a material.

Atomic Energy Act (AEA). The Act (1954) that placed production and control of nuclear materials within a civilian agency, originally the Atomic Energy Commission.

Biota. Animal and plant life of a particular region.

Blowdown. Removal of liquids or solids from a process vessel or storage vessel or a line by the use of pressure.

Borehole. A hole made by boring into the ground to study stratification, to obtain natural resources or to release underground pressure.

Byproduct material. A product from a manufacturing process that is not considered the principal material.

Cathodic protection. Protecting a metal from electro chemical corrosion by using it as the cathode of a cell with a sacrificial anode.

Centrifuge. A rotating device for separating liquids of different specific gravities or for separating suspended colloidal particles, such as clay particles in an aqueous suspension, according to particle-size fractions by centrifugal force.

Characterization. Facility or site sampling, monitoring, and analysis activities to determine the extent and nature of a release. Characterization provides the basis for acquiring the necessary technical information to develop, screen, analyze, and select appropriate cleanup techniques.

Closure Plan. Documentation prepared to guide the deactivation, stabilization, and surveillance of a waste management unit or facility under the Resource Conservation and Recovery Act.

Compliance Agreements. Legally binding agreements between regulators and regulated entities that set standards and schedules for compliance with environmental statutes. Includes Consent Order and Compliance Agreements, Federal Facility Agreements, and Federal Facility Compliance Agreements.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Federal statute (also known as Superfund), enacted in 1980 and reauthorized in 1986, that provides the statutory authority for cleanup of hazardous substances that could endanger public health, welfare, or the environment.

Conductivity. The ratio of the electric current density to the electric field in a material.

Corrective Activities. Projects that are required to bring facilities managed by the DOE/OR into compliance with Federal, State and local requirements and with DOE Orders or policy.

Criticality. The condition in which a nuclear reaction is self-sustaining.

Decommissioning. The process of removing a facility from operation, followed by decontamination, entombment, dismantlement, or conversion to another use.

Decontamination. The removal of unwanted material (typically radioactive material) from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other techniques.

Disposal. Waste emplacement designed to ensure isolation of waste from the biosphere, with no intention of retrieval for the foreseeable future, and requiring deliberate action to regain access to the waste.

DOE Orders. Internal requirements that establish DOE policy and procedures for compliance with applicable laws and regulations.

Effluent. Treated liquid waste or wastewaters discharged from a treatment unit.

Enrichment (uranium). The process that increases the percentage of uranium-235 isotopes in uranium from 1 to about 3 percent so that it can be used as fuel in a powerplant.

Environmental Restoration. Cleanup and restoration of sites contaminated with hazardous materials during past production or disposal activities.

Fissile. Capable of being split. In nuclear materials, capable of causing or undergoing fission.

Fissionable Materials. Material whose nuclei are capable of undergoing fission, or being split apart.

Flow metering. Measurement of pressure, flow rate and discharge rate of a liquid, vapor, or gas flowing in a pipe.

Gaseous Diffusion. A technology for separating fissionable uranium-235 isotopes from the more abundant nonfissionable uranium isotopes by pumping gaseous uranium hexafluoride through resistant barriers.

Graphite reactor. A reactor in which a very pure form of carbon is used as a moderator.

Groundwater. Liquid water occurring beneath the earth's surface in the interstices between soil grains, in fractures, or in porous formations.

Hazardous Waste. As defined in the Resource Conservation and Recovery Act, a solid waste or combination of solid wastes that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous wastes may be listed or characteristic.

Hot Cell (Cave). A heavily shielded compartment in which highly radioactive material can be handled, generally by remote control.

Hydrogeology. The science dealing with underground water and its movement.

Implementation Plan. A document that contains the detailed actions needed to achieve a set of specified goals and objectives.

In Situ. In position; in its original location or site.

Industrial Waste. Worthless materials remaining from industrial operations.

Interagency Agreement (IAG). A formal document in which two or more Federal Agencies agree to cooperate.

Leachate. A contaminated liquid resulting when water percolates, or trickles through waste materials and collects components of those wastes. Leaching may occur at landfills and may result in hazardous substances entering soil, surface water, or groundwater.

Life Cycle. Thirty years or the useful life of the item, whichever is less.

Low-Level Radioactive Waste Policy Amendments Act of 1985. This Act makes the Federal government responsible for disposing of Greater-Than-Class-C (higher-activity) low-level waste from commercial activities licensed by the Nuclear Regulatory Commission.

Migration of contaminants. Unaided movement of particles of contaminants (liquids, metals, etc.) into the surrounding environment.

Mixed Waste. Mixed waste contains both radioactive and hazardous components, as defined by the Atomic Energy Act and the Resource Conservation and Recovery Act, respectively.

National Environmental Policy Act (NEPA) of 1969. Act that established the requirement for conducting environmental reviews of Federal actions that have the potential for significant impact on the human environment.

National Pollutant Discharge Elimination System (NPDES). Section 402 of the Federal
Oscillation-free. Free of instability or variation.

Privatization. The turning over of a public entity (property, service, etc.) to private interests.

Pyrophoric. Able to ignite spontaneously when exposed to air.

Quality Assurance. Internal program of oversight and verification to ensure highest level of accuracy and conformance to established standards.

Radiogenic. Produced by radioactivity.

Radioisotope. An unstable isotope of an element that will eventually undergo radioactive decay (i.e., disintegration). Radioisotopes with special properties are produced routinely for use in medical treatment and diagnosis, industrial tracers, and for general research.

RCRA Facility Assessment (RFA). The initial Resource Conservation and Recovery Act (RCRA) process to determine whether corrective action for a RCRA past practice unit is warranted or to define what additional data must be gathered to make this determination; analogous to a Comprehensive Environmental Response, Compensation, and Liability Act Preliminary Assessment and Site Inspection.

RCRA Facility Investigation (RFI). The RCRA process of determining the extent of hazardous waste contamination; similar in intent to the Comprehensive Environmental Response, Compensation, and Liability Act Remedial Investigation.

Record of Decision (ROD). The Comprehensive Environmental Response, Compensation, and Liability Act document used to select the method of remedial action to be implemented at a site after the Feasibility Study/Proposed Plan process has been completed.

Release Site. A location at which a hazardous, radioactive, or mixed waste release has occurred or is suspected to have occurred. It is usually associated with an area where the hazardous, radioactive waste, mixed waste, or waste-contaminated substances have been used, treated, stored, migrated, and/or disposed of.

Remedial Investigation (RI). The Comprehensive Environmental Response, Compensation, and Liability Act process of determining the extent of hazardous substance contamination and, as appropriate, conducting treatability investigations. The RI provides the site-specific information for the feasibility study.

Remediation. Those activities performed to remove or treat hazardous waste sites or to relieve their effects.

Site. For the purposes of this plan, sites are lands, installations, and/or facilities for which DOE has or shares responsibility for Environmental Restoration and Waste Management activities.

Site Inspection. The process under the Comprehensive Environmental Response, Compensation, and Liability Act to acquire the necessary data to confirm the existence of environmental contamination at identified potential sites and to assess the associated potential risks to human health, welfare, and the environment. The data collected at each site must be sufficient to support the decision for either continuing with a remedial investigation/feasibility study or for removing the site from further investigation through a decision document.

Sludge. Pumpable material of naturally occurring or man-made origin possessing a relatively fixed volume and a moisture content ranging from 15 to 90 percent.

Solid Waste Management Unit (SWMU). Any unit at a facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. Includes, but is not limited to, container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, injection wells, recycling operations, miscellaneous units, and releases from such units.

Stabilization. The process of reducing the hazardous potential of a waste by chemically or physically converting the toxic contaminants into their least mobile or reactive form.

Storage. Retention and monitoring of waste in a retrievable manner pending final disposal.

Subassembly. A component or structural unit manufactured separately but designed to be incorporated with other parts of a final assembly or finished product.

Thermal Desorption. Removal of absorbed material or elements through use of heat.

Tiger Team. A team of independent experts appointed by the Secretary of the U.S. Department of Energy (DOE) to identify environmental and safety issues at DOE facilities.

Toxic. Relating to a harmful effect by a poisonous substance on the human body by physical contact, ingestion, or inhalation.

Toxic Substances Control Act (TSCA). TSCA was enacted in 1976 to protect human health and the environment from unreasonable risk due to exposure to, manufacture, distribution, use, or disposal of substances containing toxic chemicals. Under TSCA, any hazardous wastes that contain more than 50 parts per million of polychlorinated biphenyls are subject to regulation under this Act.

Treatment. Any activity that alters the chemical or physical nature of a hazardous waste to reduce its toxicity, volume, mobility, or render it amenable for transport, storage, or disposal.

Tumulus. Above-ground low-level waste disposal in concrete bunkers covered by a protective liner.

Underground Storage Tank (UST). Any tank or associated piping containing hazardous materials as defined by the Hazardous and Solid Waste Amendments (Subtitle C or Subtitle I).

Waste Minimization. The reduction, to the extent feasible, of hazardous waste that is generated prior to treatment, storage, or disposal of the waste. Waste minimization includes any source reduction or recycling activity that results in either (1) reduction of total volume of hazardous waste (2) reduction of toxicity of hazardous waste or (3) both.

APPENDIX B

LISTING OF AGREEMENTS AND ORDERS

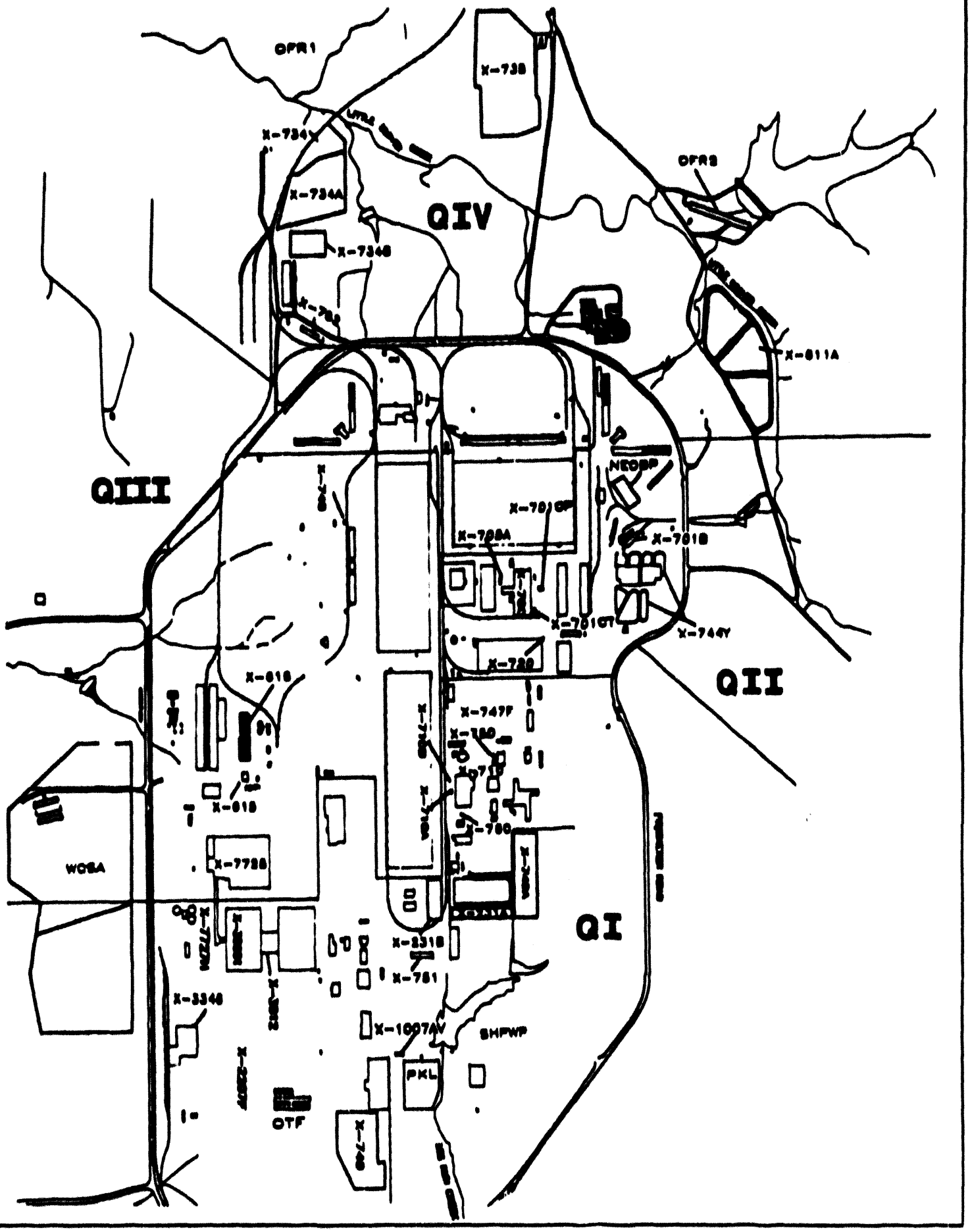
Appendix Table B-1
Federal and State Agreements
Portsmouth

Regulator	Statute(s)	Date
Ohio	RCRA	8/29/89
US EPA, Region V	RCRA/CERCLA	11/2/89

APPENDIX C

MAP OF PORTSMOUTH GASEOUS DIFFUSION PLANT

PORTSMOUTH GASEOUS DIFFUSION PLANT



Portsmouth Gaseous Diffusion Plant
Environmental Restoration Program

Decontamination and Decommissioning Facilities

Unit	Name	Description
X-1007AV	Southeast Portal	Guard portal facility
X-2207F	F&W Portal	Guard portal facility
X-7727H	Transfer Corridor	Enclosed corridor leading from X-7725 to X-3001 process building.
X-3012	PSB	Process support building.
X-3346	F&W	Gas Centrifuge Feed and Product Withdrawal Building.

Portsmouth Gaseous Diffusion Plant
Environmental Restoration Program

Solid Waste Management Units

Unit	Name	Description
X-734	Old Sanitary Landfill	Former landfill used by plant to dispose of non-radioactive wastes. Suspected contaminants awaiting identification during RCRA Facility Investigation (RFI).
X-734A	Construction Spoils Area	Construction spoils from plant construction. Suspected contaminants under investigation but probably spent lube oils and hydraulic fluids.
X-734B	Construction Spoils Area	Construction spoils from plant construction. Suspected contaminants under investigation but probably spent lube oils and hydraulic fluids.
X-735	Landfill cells 1-6, 15, 16	Cells 1-6 considered RCRA units for closure due to presence of hazardous wastes (i.e., solvents). Cells 14 and 15 are asbestos disposal sites.
X-740	Waste Oil Storage Facility	Facility used to store waste oils. Suspected contaminants PCBs, radionuclides.
X-740	Hazardous Waste Tank	Tank within the X-740 Facility used to hold aforementioned waste oils.
X-744Y	Outside LLW Storage Area	Container storage lot for low level wastes. Suspected contaminants under investigation.
X-747F	Scrap Metal Yard	Storage yard for scrap metals. Suspected contaminants uranium, technetium.
X-749	Contaminated Materials Disposal	Landfill used to dispose of low level wastes. Suspected contaminants TCE, uranium, technetium, radionuclides.

Portsmouth Gaseous Diffusion Plant
Environmental Restoration Program

Solid Waste Management Units

Unit	Name	Description
X-749A	Classified Materials Disposal	Landfill used to dispose of classified wastes. Suspected contaminants under investigation.
X-750	Hazardous Waste Tank	Tank used to receive spent crankcase oils from the garage facility.
X-751	Underground Storage Tank	Underground fuel storage tank.
X-752	Waste Storage Facility	Facility used to store RCRA waste materials.
X-760	Neutralization Pit	Pit used to adjust the pH of liquid effluent from the pilot facility. Suspected contaminant uranium.
X-752	Soil Investigation/Remediation	Soils associated with the aforementioned X-752 facility.
X-7725	(R/A Building Centrifuge Equipment)	Contaminated gas centrifuge uranium enrichment equipment.

Portsmouth Gaseous Diffusion Plant
Environmental Restoration Program

Solid Waste Management Units

Unit	Name	Description
X-615	Old Sewage Treatment Plant	Abandoned sewage treatment facility. Contaminants believed to consist of radionuclides, oils, PCBs, and TCE.
X-616	Chromium Sludge Lagoon	Pond used for clarification of conditioned RCW. Contaminant believed to be primarily chromium. (Note: unit has been closed under RCRA).
X-700	RCRA/Uranium Tank Storage Area	Area used to store mixed wastes. Contaminants believed to be TCE, uranium and technetium.
X-701B	Holding Pond	Basin used to clarify treated metal working/cleaning wastes. Suspected contaminants are uranium, technetium, TCE.
X-701CT	Neutralization Tank	Tank used to adjust pH of waste metal working fluids prior to discharge. Suspected contaminants uranium, technetium, TCE.
X-701CP	Neutralization Pit	Pit used to adjust pH of waste metal working fluids prior to discharge. Suspected contaminants uranium, technetium, TCE.
X-705A	Incinerator	Incinerator used to burn low level radioactive waste (i.e., paper, boot covers, tyveks, etc.). Suspected contaminants radionuclides.
X-710	Radioactive Waste Pit	Pit used to receive radioactive lab wastes. Suspected contaminants TCE, uranium, radionuclides.
X-710	Acid Pit	Pit used to receive acidic lab wastes for neutralization. Suspected contaminants TCE, uranium, radionuclides.

Portsmouth Gaseous Diffusion Plant
Environmental Restoration Program

Solid Waste Management Units

Unit	Name	Description
NEOBP	Northeast Oil Biodegradation Plot	Section of land used to dispose of spent lube oils laden with PCB, uranium and technetium
OFR	Old Firing Range	Guard small arm practice range. Soil contaminated with lead.
OFR1	Old Firing Range	Guard small arm practice range. Soil contaminated with lead.
OFR2	Old Firing Range	Guard small arm practice range. Soil contaminated with lead.
OTF	Old Training Facility	Old training facility used to instruct personnel in welding and metal working. Soils suspected contaminated with trichloroethylene (TCE).
SHPWP	South Holding Pond Waste Pile	Dredge spoils from bottom of South Holding Pond. Suspected contaminants uranium, TCE, PCB.
WCSA	West Construction Spoils Area	Construction spoils from plant construction. Suspected contaminants under investigation but probably spent lube oils and hydraulic fluids.
X-231A	Oil Biodegradation Plot	Section of land used to dispose of spent lube oils laden with PCB, uranium and technetium
X-231B	Oil Biodegradation Plot	Section of land used to dispose of spent lube oils laden with PCB, uranium and technetium
X-611A	Lime Sludge Lagoon	Lagoon previously used for clarification of treated recirculating cooling water (RCW). Contaminant believed to be primarily chromium.

APPENDIX D

RESPONSE TO PUBLIC COMMENTS ON SITE-SPECIFIC PLAN

No formal comments were received from the general public on the FY92 Portsmouth Gaseous Diffusion Plant SSP.

DATE
FILMED
11/5/93
END