

**BATTELLE  
COLUMBUS  
LABORATORIES  
DECOMMISSIONING  
PROJECT**

FEDERAL FACILITIES COMPLIANCE ACT

**Amended Proposed**

**SITE TREATMENT PLAN**

OCTOBER 1995



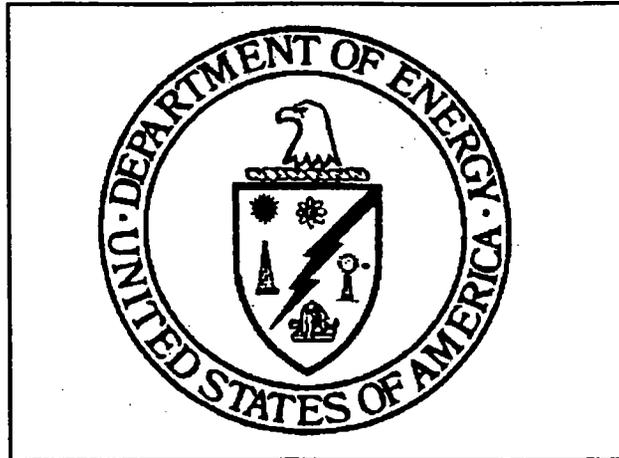
**Battelle**

*... Putting Technology To Work*



October 1995

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**U.S. DEPARTMENT OF ENERGY  
BATTELLE COLUMBUS LABORATORIES  
DECOMMISSIONING PROJECT**

**AMENDED PROPOSED SITE TREATMENT PLAN**

**COMPLIANCE PLAN VOLUME**

**October 1995**

**BATTELLE COLUMBUS LABORATORIES**

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## ACRONYMS

As Low As Reasonably Achievable .....	ALARA
Battelle Columbus Operations .....	BCO
Battelle Columbus Laboratories Decommissioning Project .....	BCLDP
Battelle Memorial Institute .....	BMI
Decontamination and Decommissioning .....	D&D
Draft Site Treatment Plan .....	DSTP
Environmental Restoration .....	ER
Environmental Management .....	EM
Environmental Management Advisory Board .....	EMAB
Environmental Assessment .....	EA
Federal Facility Compliance Act .....	FFCA
Land Disposal Restriction .....	LDR
Low Level Waste .....	LLW
Mixed Waste Inventory Report .....	MWIR
National Environmental Policy Act .....	NEPA
National Governor's Association .....	NGA
Oak Ridge .....	OR
Ohio Environmental Protection Agency .....	OEPA
Programmatic Environmental Impact Statement .....	PEIS
Proposed Site Treatment Plan .....	PSTP
Resource Conservation and Recovery Act .....	RCRA
Richland .....	RL
Savannah River .....	SR
Scientific Ecology Group .....	SEG
Site Treatment Plan .....	STP
Solid Waste Operations Complex .....	SWOC
Transuranic .....	TRU
Treatment Storage and Disposal Facility .....	TSDF
U.S. Department of Energy .....	DOE
U.S. Environmental Protection Agency .....	EPA
Waste Isolation Pilot Project .....	WIPP
Westinghouse Hanford Company .....	WHC

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## 1.0 PURPOSE AND SCOPE

- 1.1 The U.S. Department of Energy (DOE) is required to prepare a plan for developing treatment capacities and technologies for each facility at which DOE generates or stores mixed waste, pursuant to Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C 6721, as amended by Section 105(a) of the Federal Facility Compliance Act [(P.L. 102-386) (FFCA)]. Upon submission of the plan to the appropriate regulatory agency, the FFCA requires the recipient agency to solicit and consider public comments, and approve, approve with modification, or disapprove the plan within six months. The agency is to consult with the U.S. Environmental Protection Agency (EPA) and any State in which a facility affected by the plan is located. Upon approval of a plan, the regulatory agency must issue an Order requiring compliance with the approved plan.
- 1.2 The DOE Chicago Operations Office, hereinafter referred to as DOE-CH, has prepared this Site Treatment Plan (STP) for mixed waste at the Battelle Columbus Laboratories Decommissioning Project (BCLDP) which identifies how DOE-CH proposes to obtain treatment of the site's mixed waste. At the Battelle Columbus Laboratories Decommissioning Project (BCLDP), the DOE is the principal cost share partner in a remediation activity which generates mixed wastes. Battelle is the designated RCRA large-quantity generator; however, under Contract W-7405-ENG-92, all radioactive waste (including mixed waste) generated by the project is considered DOE-owned for the purposes of disposal.
- 1.3 The purposes of this STP include:
- 1.3.1 Fulfilling the requirements of the FFCA;
  - 1.3.2 Establishing an enforceable framework in conjunction with the Order in which DOE-CH will develop and treat or otherwise meet RCRA land disposal restrictions (LDR) for all covered LDR mixed wastes.
- 1.4 The Compliance Plan Volume, in conjunction with the Background Volume, comprises the STP. The Compliance Plan Volume provides overall schedules and processes for achieving compliance with LDR, and other provisions for implementing the approved STP that would be enforced under the Order. Additional discussion contained in the Background Volume is provided for informational purposes only.
- 1.5 This STP, once approved and an Order issued, fulfills the requirements contained in the Federal Facility Compliance Act of 1992, RCRA Section 3021, and therefore, pursuant to §105(a) of the FFCA (RCRA §3021(b)(5)), this STP and Order shall stand in lieu of any other interpretations of DOE-CH's requirement to develop and submit a plan for the development of treatment capacities and technologies pursuant to RCRA Section 3021.

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## 2.0 IMPLEMENTATION OF THE SITE TREATMENT PLAN

Implementation of this Plan is defined in the Director's Findings and Orders which has been issued by the Ohio Environmental Protection Agency, as described in Section 1.1.

## 3.0 LOW-LEVEL MIXED WASTE STREAMS

### 3.1 Mixed Waste Streams for Which Technology Exists

This section describes the plans and schedules to treat 4 low-level mixed waste streams at the BCLDP. The *Background Volume* of this report describes each waste stream and the preferred treatment option for that waste stream. The completion of decontamination and decommissioning activities at the King Avenue facility area anticipated by October 1996. By this time, it is projected that the majority of EM wastes will have been generated and shipped off-site for treatment and disposal. The completion of D&D activities at the West Jefferson is uncertain at this time. It is estimated that mixed waste generation will culminate at this site by the year 2003.

The scheduled completion of D&D activities at the West Jefferson site is uncertain at this time. The schedule for initiation and completion of decontamination of the West Jefferson site is dependent on the funding received in fiscal year 1997 and beyond. Currently, two funding scenarios are being considered which result in significantly different schedules. At the "Target" funding level (presently the planning assumption), only surveillance and maintenance would be performed at the West Jefferson site between FY 1997 and FY 1999. Actual decontamination work would be deferred until the year 2000, with completion planned for 2003. The second funding scenario assumes that sufficient resources can be applied to accelerate work at the West Jefferson site, consistent with a DOE strategy to eliminate its liability at a number of small or privately owned sites as rapidly as possible. Under this accelerated funding scenario, decontamination work will begin in FY 1997, allowing completion by the end of FY 1999.

The scope for the decontamination activities is defined in a baselined project plan. A detailed work plan will be prepared for each fiscal year's activity, based on the funding available. These annual work plans will form the basis of any notice to the State regarding changes to the project which may be relevant to this STP.

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### **3.1.1 Lab Packs (Inorganic) BC-W001**

3.1.1.1 This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

### **3.1.2 Lab Packs (Organic) BC-W002**

3.1.2.1 This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

### **3.1.3 Elemental Lead BC-W003**

3.1.3.1 This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

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### **3.1.4 Mercury Contaminated Particulate/Debris from Ductile Iron Drain Lines BC-W004**

3.1.4.1 This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

## **4.0 TRU MIXED WASTE STREAMS**

### **4.1 Description of Waste Streams**

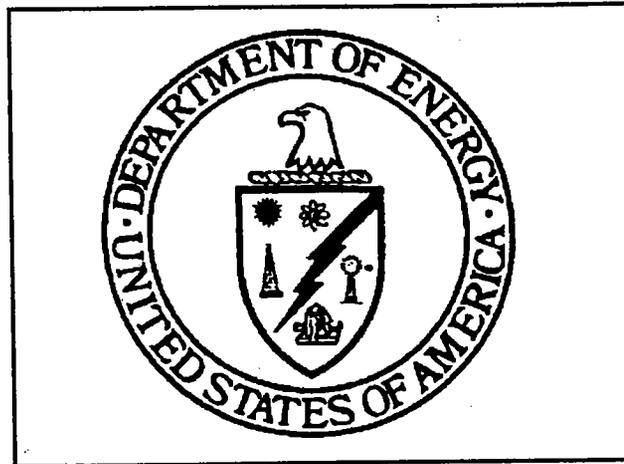
Transuranic (TRU) wastes identified by the BCLDP are the debris and residue of examination/testing of spent nuclear fuel. However, TRU mixed wastes are not anticipated based on process knowledge; therefore, generation of TRU mixed-waste by the BCLDP is speculative at this time. Further characterization of the JN-1 hot cells at the West Jefferson site is required to validate this assumption. Possible future sources of TRU mixed waste are contaminated lead shielding, and hydraulic fluids in hot cell doors and major equipment. Because of radiation levels, and inaccessibility, these items cannot be characterized until the hot cell clean-up is nearly complete, now scheduled for post-1999. Decontamination processes, such as chemical cleaning and filtration are likely to be effective in minimizing or preventing the generation of mixed TRU wastes.

### **4.2 Strategy for Managing TRU Mixed Waste**

Nearly all of the TRU waste in the hot cells derives from examination of spent nuclear fuel and will require remote handling techniques. The current plan is to ship all TRU waste off site for interim storage as the Waste Isolation Pilot Project (WIPP) is not scheduled to begin receiving remote-handled waste until after 2002. Any TRU mixed waste which may be generated will also be sent off site for appropriate treatment and/or storage. There will be no long-term on site storage of TRU mixed waste inconsistent with OAC 3734-59-50. The specific site for interim storage or treatment will be identified once the characteristics of any mixed TRU waste is established.

In the event that a TRU mixed waste stream is identified during the decontamination effort at the West Jefferson site, the BCLDP will notify the Ohio EPA in accordance with the provisions of the Directors Findings and Orders. Both parties will determine whether the identification of a new mixed waste stream necessitates a formal revision to the Site Treatment Plan. The notification of the Ohio EPA will include the nature of the TRU mixed waste stream, and the proposed treatment/storage site. The State may be requested to enter into discussions with the proposed receiving state regarding access.

DOE shall include information regarding progress in the national TRU mixed waste management program in the update to the STP required by the Director's Findings and Orders issued by OEPA of this Compliance Plan. This will include, as applicable and appropriate, the status of the no-migration variance petition, and information related to characterization, packaging, and/or treatment capabilities or plans for TRU mixed waste related to WIPP waste acceptance criteria.



**U.S. DEPARTMENT OF ENERGY  
BATTELLE COLUMBUS LABORATORIES  
DECOMMISSIONING PROJECT**

**AMENDED PROPOSED SITE TREATMENT PLAN**

**BACKGROUND VOLUME**

**October 1995**

**BATTELLE COLUMBUS LABORATORIES  
DECOMMISSIONING PROJECT  
AMENDED PROPOSED SITE TREATMENT PLAN**

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## ACRONYMS

As Low As Reasonably Achievable .....	ALARA
Battelle Columbus Operations .....	BCO
Battelle Columbus Laboratories Decommissioning Project .....	BCLDP
Battelle Memorial Institute .....	BMI
Decontamination and Decommissioning .....	D&D
Draft Site Treatment Plan .....	DSTP
Environmental Restoration .....	ER
Environmental Management .....	EM
Environmental Management Advisory Board .....	EMAB
Environmental Assessment .....	EA
Federal Facility Compliance Act .....	FFCA
Land Disposal Restriction .....	LDR
Low Level Waste .....	LLW
Mixed Waste Inventory Report .....	MWIR
National Environmental Policy Act .....	NEPA
National Governor's Association .....	NGA
Oak Ridge .....	OR
Ohio Environmental Protection Agency .....	OEPA
Programmatic Environmental Impact Statement .....	PEIS
Proposed Site Treatment Plan .....	PSTP
Resource Conservation and Recovery Act .....	RCRA
Richland .....	RL
Savannah River .....	SR
Scientific Ecology Group .....	SEG
Site Treatment Plan .....	STP
Solid Waste Operations Complex .....	SWOC
Transuranic .....	TRU
Treatment Storage and Disposal Facility .....	TSDF
U.S. Department of Energy .....	DOE
U.S. Environmental Protection Agency .....	EPA
Waste Isolation Pilot Project .....	WIPP
Westinghouse Hanford Company .....	WHC

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## EXECUTIVE SUMMARY

The Federal Facility Compliance Act (FFCA) requires the Department of Energy to prepare Site Treatment Plans for how mixed waste, waste containing both hazardous and radioactive components, will be treated. More specifically, the FFCA requires each individual DOE site that stores or generates mixed waste to develop a Site Treatment Plan. Each site's Plan or activity must provide a list or inventory of mixed waste, treatment technology required and the approach or treatment facility that will be used to treat the waste. The site's Plan is then submitted to the cognizant state agency or Regional EPA office for review and approval, approval with modification, or disapproval. For the Battelle Columbus Laboratories, the Plan is being submitted to the Ohio Environmental Protection Agency for review and approval.

This Plan is a result of a three-part planning process consisting of Conceptual, Draft, and this Proposed Plan. The Conceptual Plan was completed in October 1993. In general, that document provided a mixed waste inventory, identified potential treatment technologies and a range of treatment options. The Draft Plan, completed in August 1994, represented the second stage of the process in which the treatment options identified in the Conceptual Plan were narrowed down to few or only one preferred option for each waste stream. The Proposed Plan is the final stage of the planning process and provides the preferred option and treatment schedule of each waste stream.

The Proposed Plan, like the Draft Plan, consists of two major sections or volumes: Background Volume and Compliance Plan Volume. The Background Volume provides a more extensive discussion while the Compliance Plan Volume is a much shorter and focused document.

The Background Volume consists of the following eight sections:

- **Section 1. Introduction.** This in turn discusses the Purpose and Scope, Site History and Mission, Framework for Developing the Site Treatment Plans, The Proposed Plan Organization, and Related Activities.
- **Section 2. Methodology.** This includes discussions of Assumptions, Preferred Selection Process, Coordination with Regulatory Agencies and Other Stakeholder, Characterization of Mixed Waste and Waste Minimization.
- **Section 3. Low Level Mixed Waste Stream.** This provides, for each mixed waste stream, a description of characteristics and volume, treatment technology needed, and the preferred treatment option.
- **Sections 4 and 5. TRU Mixed Waste and High Level Mixed Waste Stream.** If applicable, this provides information on these waste streams.

- **Section 6. Future Generation of Mixed Waste.** Identifies, as possible, mixed waste not discussed in Section 3 that could result from future restoration or site remediation activities.
- **Section 7. Storage Report.** Discusses the adequacy of the site's mixed waste storage facilities.
- **Section 8. Process for Evaluating Disposal Issues in Support of the STP.** This summarizes the overall DOE activity in the area of disposal of mixed waste treatment residuals.

The Plan Volume is a shorter and more focused document consisting of the following sections:

- **Section 1. Purpose and Scope of the Compliance Plan.**
- **Section 2. Implementation of the Site Treatment Plan.** This provides administrative language for the Plan referencing a Director's Findings and Orders issued by the Ohio Environmental Protection Agency.
- **Section 3. Low Level Mixed Waste Schedules.** For each mixed waste stream and option, identifies milestones and target dates.

The following table provides a summary matrix which identifies each waste stream, the respective preferred treatment option, and inventory.

**Site Waste/Treatment Matrix**

Waste Name	Preferred Treatment	Total Volume (Actual + Projected) (m <sup>3</sup> )
BC-W001 Inorganic Lab Packs	Envirocare of Utah	0.0203
BC-W002 Organic Lab Packs	ORNL TSCA Incinerator	0.017
BC-W003 Elemental Lead	Envirocare of Utah	1.304
BC-W004 Mercury Contaminated Drainlines	Hanford WRAP I	12.000

Also as noted above, Chapter 3 of the Background Volume provides more detail on each of the items in this matrix.

This plan has been reviewed extensively with the staff of Ohio EPA, and has been made available to interested members of the public on request.

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## 1.0 INTRODUCTION

### 1.1 Purpose and Scope

The Department of Energy (DOE) is required by section 3021(b) of the Resource Conservation and Recovery Act (RCRA), as amended by the Federal Facility Compliance Act (the Act), to prepare site treatment plans (STPs or plans) describing the development of treatment capacities and technologies for treating mixed waste. Plans are required for facilities or activities where DOE generates or stores mixed waste, defined by the Act as waste containing both a hazardous waste subject to the Resource Conservation and Recovery Act, and a source, special nuclear or by-product material subject to the Atomic Energy Act of 1954 (42 U.S.C.2011 et seq.). The Battelle Columbus Laboratories Decommissioning Project (BCLDP) Proposed Site Treatment Plan (Proposed STP or Proposed Plan) is being provided to The Ohio Environmental Protection Agency (OEPA) for approval in accordance with the Act.

The BCLDP Proposed Plan is the result of a "bottom up" process described in an April 6, 1993, Federal Register notice (58 FR 17875). DOE has followed an iterative process in developing the Plans, working closely with State regulatory agencies and EPA at the site and national level throughout the process. This Proposed Plan follows two interim versions—a Conceptual Site Treatment Plan submitted in October 1993 and a Draft Plan submitted in August 1994—which were provided to regulatory agencies and made publicly available. The Conceptual Plan identified a range of preliminary options for treating the mixed waste at the BCLDP. The Draft Plans identified site-specific preferred treatment options which had not yet been evaluated for impacts to other DOE sites or to the overall DOE program. DOE initially planned to submit the Proposed Plans at the end of February 1995. However, DOE revised its submittal date with the support of the States and EPA to allow for additional discussions. (See 60 FR 10840, February 28, 1995). The BCLDP Conceptual Plan and Draft Plan and other related information are available at:

- Columbus Metropolitan Library, Main Branch, 96 S. Grant Ave., and Northside Branch, 1423 N. High St., Columbus, Ohio
- State Library of Ohio, 65 S. Front St., Columbus, Ohio
- West Jefferson Public Library, 301 Main St., West Jefferson, Ohio

This Proposed Plan contains DOE's preferred options developed after evaluation and integration of the site-specific treatment options contained in the Draft Plans of the other sites with DOE mixed waste. The process DOE followed was coordinated with State and EPA regulators and is described in Section 2.2. DOE believes the treatment options contained in the Proposed Plans represent a sensible national configuration for

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mixed waste treatment systems that balances DOE's interests and concerns and the input DOE received on the Draft Plans from the regulatory agencies and others.

The schedules contained in this and the Proposed Plans for other sites are based on funds currently budgeted for and projected to be available for waste management activities. As a result, schedules in the Proposed Plans for some facilities, particularly the largest and most costly facilities, may be protracted. Schedules for small sites that are relying on the treatment capacity at larger sites are also affected. DOE anticipates that, at some sites, funds will be shifted from other environmental management activities to support more sensible and integrated schedules for mixed waste treatment.

DOE discussed with States and EPA the difficulty DOE faces in providing timely schedules for some new treatment facilities given current budgetary constraints, and the need to consider whether funds from other activities should be shifted to support more timely schedules. The States and EPA recommended that the Proposed Plans be submitted with schedules consistent with current budget and priorities, even though they recognized schedules may be extended. As part of its efforts to develop its budget request for FY 1997, DOE has asked regulatory agencies to work with DOE and other interested parties at the site and National level to assist DOE in prioritizing its activities, including mixed waste treatment, and in assessing activities under way and that need to be accomplished at the site. Through this budget development process and through discussions on the Proposed Plans, DOE and the regulatory agencies expect that some schedules will be revised before the Site Treatment Plans are approved and orders issued.

Even after the Plans are approved, DOE anticipates that modifications and adjustment to the Plan will be necessary because of the technical and funding uncertainties that naturally exist with long-term activities like those covered by the Plans. For example, emerging or new technologies not yet considered may be identified in the future that provide opportunities to manage waste more safely, effectively, and at lower cost than the current technologies identified in the Proposed Plan. DOE will continue to evaluate and develop technologies that offer potential advantages in the areas of public acceptance, risk abatement, and performance and life cycle cost. Should more promising technologies be identified, DOE may request a modification of its treatment plan in accordance with provisions of the final Site Treatment Plan and/or the Order.

This "Background Volume" is one of two volumes that constitute the Proposed Site Treatment Plan. It provides a detailed discussion of the preferred option or options, identifies the waste streams the option addresses, and gives explanatory information for the "Compliance Plan Volume." The Compliance Plan Volume identifies the capacity to be developed and associated schedules as required by the Act.

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## 1.2 Site History and Mission

### 1.2.1 Site History

On April 16, 1943, Battelle Memorial Institute (BMI) entered into Contract No. W-7405-ENG-92 with the Manhattan Engineer District to perform atomic energy research and development activities. Since that time, Battelle has continuously performed research and development work under the contract at its facilities for the DOE and its predecessor agencies. The Battelle facilities are located at BMI's Battelle Columbus Laboratories King Avenue site in Columbus, Ohio, and West Jefferson site near West Jefferson, Ohio. Fifteen buildings or portions thereof, and related external areas, that became radioactively contaminated as a result of work performed under the government contract are to be decontaminated and released for use by Battelle without radiological restrictions, as part of the government's obligation under the contract. The buildings are owned by BMI which is a charitable trust under provisions in Ohio law.

### 1.2.2 Site Description

Of the 15 contaminated buildings, nine are located in Columbus, Ohio (Figure 1-1), and the remaining six buildings are located at the West Jefferson site (Figure 1-2 shows the three buildings of the former nuclear sciences area), which is approximately 15 miles west of Columbus. The type and extent of contamination varies from building to building, depending on the nature of nuclear research historically performed. Most of the contamination at the King Avenue site, for example, is due to uranium, thorium and associated daughter products. These radioactively contaminated research facilities are located in older buildings that comprise part of the main Battelle campus across the street from Ohio State University. The immediate contiguous area can be characterized as a moderate density residential area. A river, which passes through the city, and several commercial and industrial areas are within one-half mile of the King Avenue site. The West Jefferson site consists of contaminated facilities similar to the King Avenue site, as well as a building containing a number of hot cells that are highly contaminated. The bulk of transuranic (TRU), mixed fission products, and activation product contamination is confined to the Nuclear Sciences Area of the West Jefferson site. The West Jefferson site lies in a rural, agricultural setting in eastern Madison County. The nearest residence is over one half mile from the site boundary.

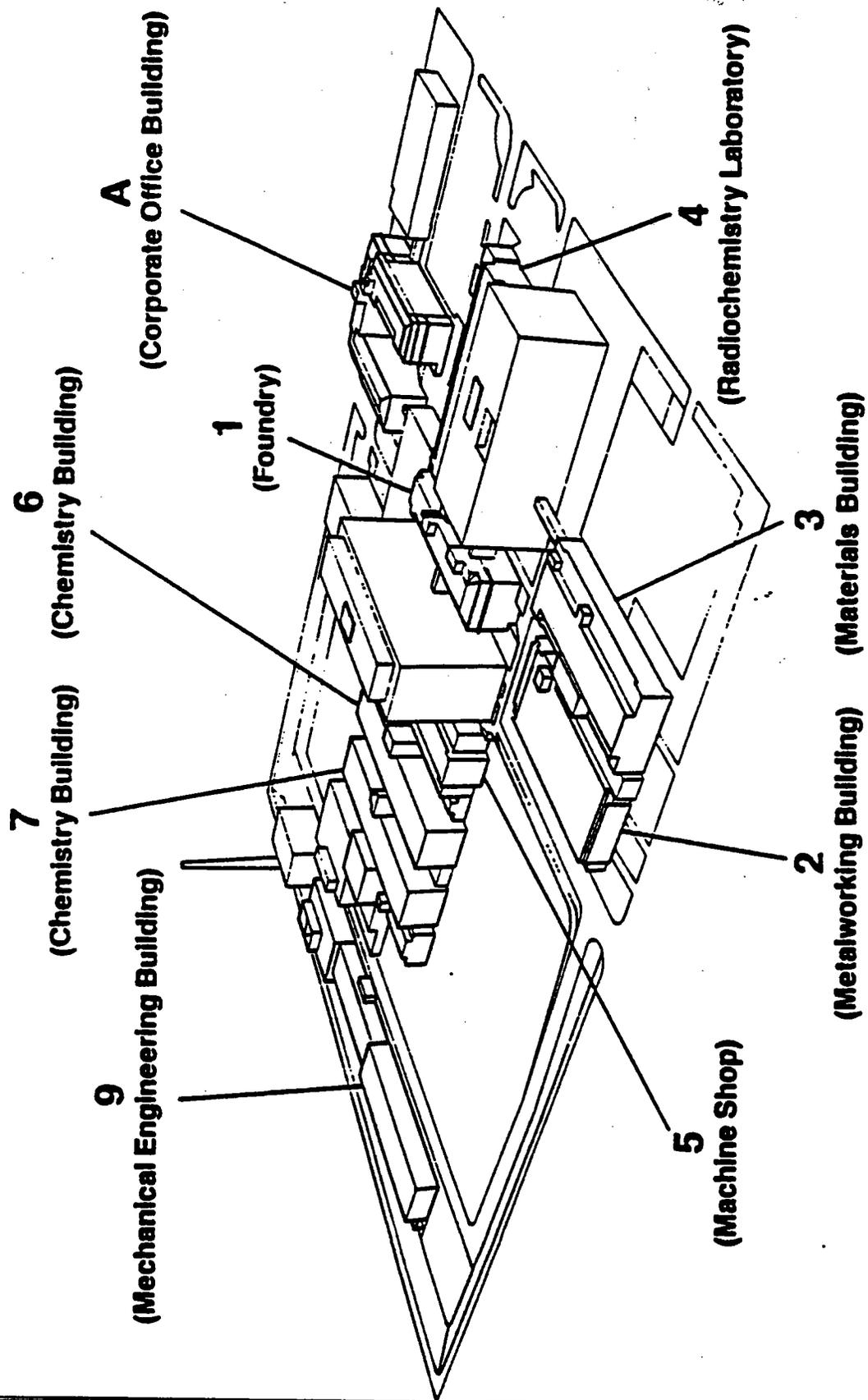


Figure 1-1. Building Numbers and Locations at the King Avenue Site

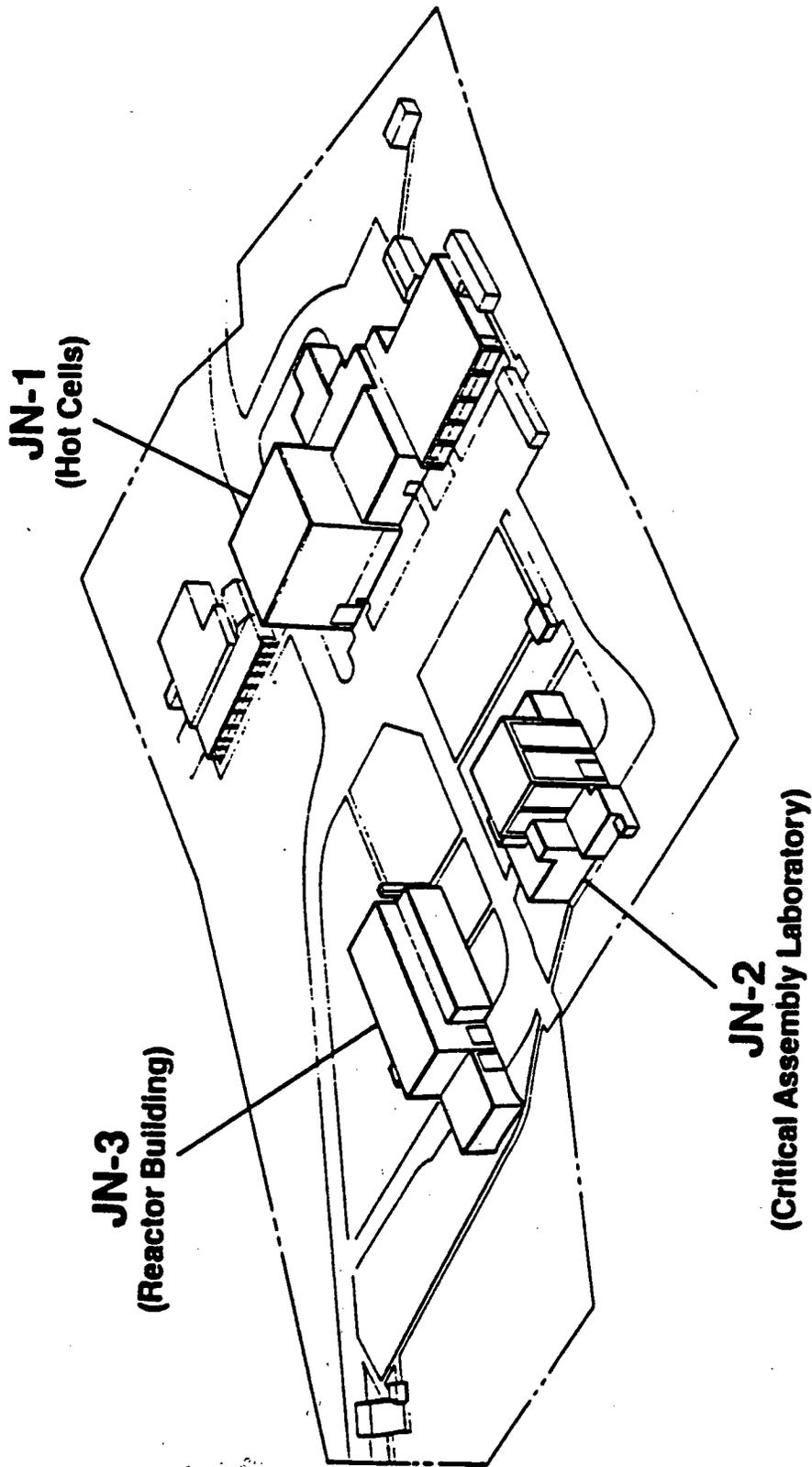


Figure 1-2. Building Numbers and Locations at the West Jefferson Site

### 1.2.3 Project Mission

DOE intends that Battelle's facilities be returned to a condition suitable for use without radiological restrictions. Actual future use of these facilities will be determined by Battelle. Battelle must also demonstrate compliance with NRC decommissioning requirements. Residual radioactivity will be kept as low as reasonably achievable (ALARA), consistent with the limits established in NRC Regulatory Guide 1.86. The objectives associated with decontamination and decommissioning (D&D) also include to:

- Identify all areas requiring control and cleanup by conducting pre- and post-D&D radiological characterization surveys;
- Maintain facilities awaiting decontamination in a manner that limits worker, public and environmental exposure to potential hazards;
- Prepare a detailed design and schedule for specific building remediation campaigns;
- Decontaminate laboratory equipment, interior building surfaces, and any adjacent areas of soil contamination using available technology in the most cost-effective manner possible;
- Segregate and minimize low-level radioactive waste resulting from D&D activities to reduce waste shipment and disposal costs, and ship to an approved offsite storage/disposal facility; and
- Receive an independent verification survey for all building decontaminations, and obtain NRC and DOE management certification of completed decontamination.

There are no major environmental issues regarding the BCLDP. Battelle, as a private, nongovernmental entity, is responsible for maintaining its operations in full compliance with all applicable health, safety, and environmental laws and regulations.

All radioactive waste is from surveillance and maintenance, characterization, health physics, material removal, decontamination and waste management activities. The majority (approximately 95 percent by volume) of the BCLDP generated and stored waste is low level waste (LLW). Transuranic (TRU) waste accounts for about 5 percent by volume. A small amount (less than 5 percent) of radioactive mixed waste is anticipated.

The Project is responsible for the handling and disposal of decommissioning wastes that are contaminated with radioactivity, including: high volume/low activity wastes such as building rubble; contaminated laboratory equipment; and protective clothing, high efficiency particulate air filters, and cleaning materials with residual low-level radioactivity. In addition, cleanup of the hot cell facility will result in both high- and low-activity TRU wastes. Hazardous wastes that have no radioactivity above established release limits are the responsibility of Battelle. All radioactive and radioactive mixed-wastes are to be shipped to an offsite, DOE-approved facility for treatment, storage or disposal.

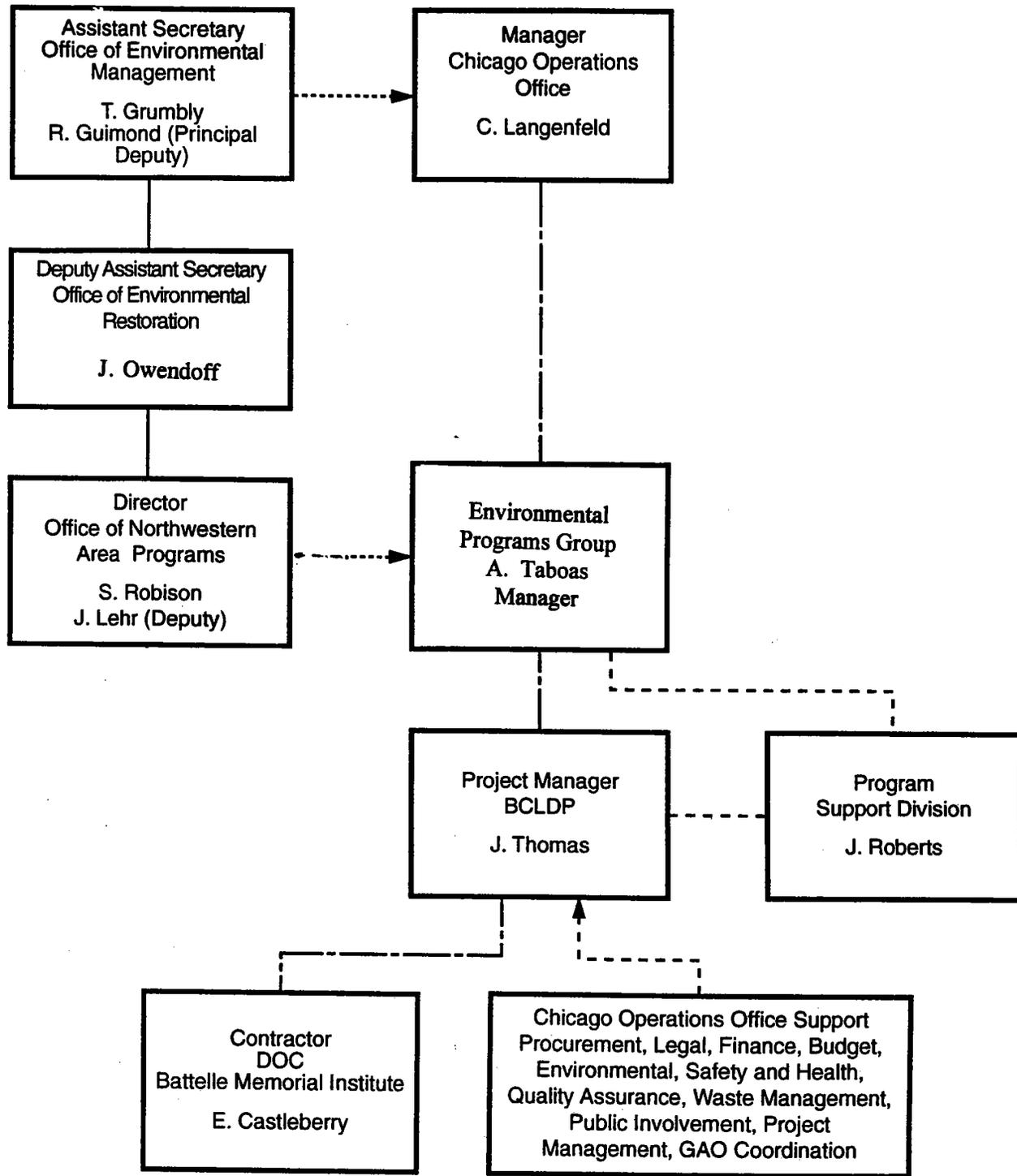
#### 1.2.4 Organization

The BCLDP will be managed by the DOE Chicago Operations Office under the charter established between the Chicago Operations Office and DOE Headquarters. BMI will function as the Decommissioning Operations Contractor and will be responsible for all operations, including procurement of appropriate subcontractors when needed. Figure 1-3 presents the DOE and contractor organizational relationships for the project. Figure 1-4 shows the organization of the Battelle Decontamination and Decommissioning Operations.

#### 1.2.5 Waste Management Operations

The BCLDP waste management group provides all administrative and operational directives and is responsible for all radioactive waste related activities. The BCLDP is responsible only for radioactive and radioactive mixed wastes generated by D&D activities. Hazardous wastes without collateral radioactivity are the responsibility of Battelle under all applicable regulations and its RCRA permit. Waste management activities include waste handling, monitoring, separation, segregation, minimization, characterization, sampling, classifying, certifying, packaging, and shipping of LLW, TRU waste, and low level radioactive mixed waste generated during all phases of the BCLDP. The BCLDP does not operate treatment, storage or disposal facilities.

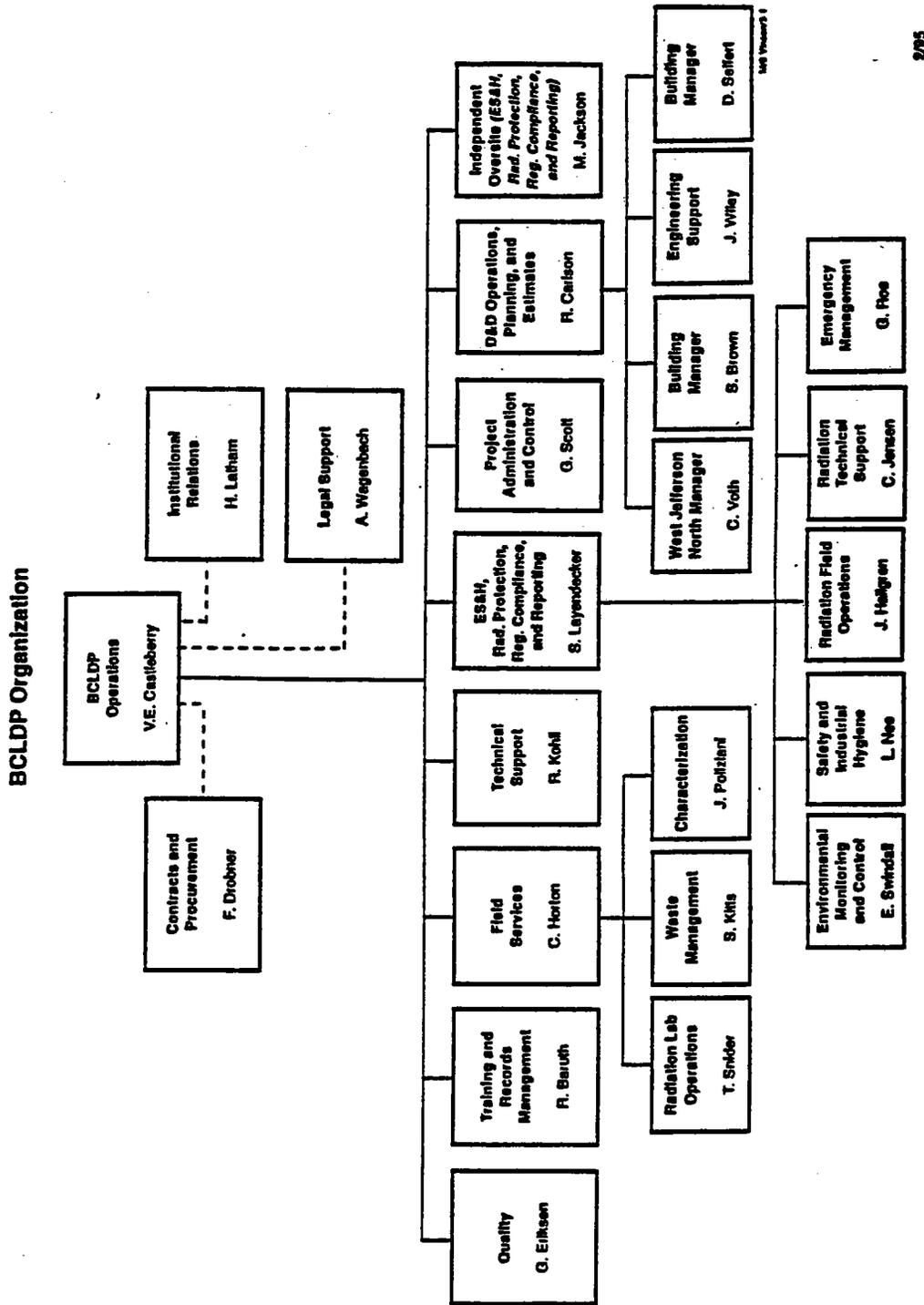
The BCLDP maintains certification to ship low-level wastes to the Hanford site for treatment (as necessary), and disposal. Currently, the BCLDP is identified as a generator site for specific mixed-waste streams in Hanford's waste management plans. Waste accumulation, segregation, characterization, and packaging for shipment occurs on-site. The project also has received approval to utilize commercial facilities for its low-level (and certain low-level mixed) wastes. Since December 1993, the project has shipped over 60,000 cu ft of low-level radioactive waste to Envirocare of Utah under an Interagency Agreement with the U.S. Army Corps of Engineers. Additionally, the project has entered into a contract with the Scientific Ecology Group (SEG) at their Oak Ridge, TN facility for volume reduction services (incineration,



**Legend**

- Project Implementation Responsibility
- ..... Technical and Financial Guidance
- - - - - Coordination and Support

Figure 1-3. DOE-BCLDP Organization Chart



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Figure 1-4 Battelle Decontamination and Decommissioning Operations Organization

supercompaction, and smelting) prior to final shipment of wastes to Hanford or Envirocare. Wastes are shipped in accordance with all applicable Department of Transportation regulations in order to assure public health and safety.

### 1.3 Framework For Developing DOE's Site Treatment Plans

The following paragraphs describe the relationships between the requirements that led to the process the DOE is following to prepare the Site Treatment Plans. Key components of this regulatory framework are as follows.

**RCRA Land Disposal Restriction (LDR) requirements** mandate the treatment of hazardous waste (including the hazardous component of mixed waste) to certain standards before land disposal. The Land Disposal Restrictions prohibit storage of hazardous wastes that do not meet LDR standards (except for the purposes of accumulating sufficient quantities to facilitate proper recovery, treatment, or disposal of the waste. DOE is currently storing mixed waste at many of its sites nationwide, inconsistent with the LDR provisions, because treatment capacity for such wastes is not adequate or is simply unavailable at this time.

**The Federal Facilities Compliance Act** signed on October 6, 1992 (P.L. 102-386) waives sovereign immunity for fines and penalties for RCRA violations at Federal facilities. However, a provision of the Act postpones that waiver for three years for mixed waste LDR storage prohibition violations at DOE sites. The Act requires that the DOE prepare site-specific treatment plans "for each facility at which the Department of Energy generates or stores mixed wastes." While the Battelle Columbus Laboratories are not a DOE Facility, the language of the Act has been interpreted to include the BCLDP because any mixed wastes generated during the clean-up of the site will be accepted contractually by the DOE for treatment and disposal.

The Act requires that the DOE submit the site-specific treatment plan to the appropriate state authority for "review and approval, modification, or disapproval." The plans will be approved by the State or EPA, after consultation with other affected States and consideration of public comment, and an order issued by the regulator requiring compliance with the plan. The DOE and the State of Ohio EPA have entered discussions on how to devise an appropriate compliance order for a non-DOE site where no LDR waste is out of compliance. This is described more fully in the *Compliance Volume* of this plan. The Act further provides that DOE will not be subject to fines and penalties for LDR storage violations as long as it is in compliance with the approved plan and order.

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The Act specifies that the *Site Treatment Plans* must address all mixed waste at a site, regardless of the time of generation. For mixed waste for which identified treatment technologies exist, the plan must provide a schedule and milestones for constructing the necessary treatment capacity. For mixed waste without an identified existing treatment technology, the plan must include a schedule for identifying and developing technologies. The Act also requires the plan to address wastes where DOE proposes radionuclide separation and to provide an estimate of the volume of waste that would exist without such separation. Section 3021(b)(1)(C) of RCRA states that the plans may provide for centralized, regional, or on-site treatment of mixed waste, or any combination thereof. Section 3021(b)(2) requires the States to consider the need for regional treatment facilities in reviewing the plans.

The “**Schedule for Submitting Plans for the Treatment of Mixed Waste Generated or Stored at Each Site**”, was published April 6, 1993, in the Federal Register (58 FR 17875). In the Notice, DOE committed to providing the Site Treatment Plans in three phases: a “conceptual plan” completed in October 1993, a “draft plan” no later than August 1994, and a “final proposed plan” no later than February 1995. This process provides opportunity for early involvement by the States and other stakeholder to discuss technical and equity issues associated with the plans.

The *Conceptual Plan* submitted October 1993, focused on identifying treatment needs, capabilities, and options for treating the site’s mixed waste. The *Draft Plan* submitted last August focused on identifying preferred options for treating the site’s mixed wastes, wherever possible, as well as proposed schedules for constructing capacity. The options presented represented the site’s best judgment of the available information and the States’ preferences, and were viewed as a starting point for discussion leading to the development of this *Final Proposed Plan*, which is being submitted to the regulatory agency for review and approval, approval with modification, or disapproval, as required by the Act. Each version of the *Plan* has reflected discussions among states, as well as site-specific input from the individual regulatory agency and other interested parties on the previous submittal. It is DOE’s intent that this iterative process, with ample opportunity for input and discussion, will facilitate *approval of the Site Treatment Plan and issuance of the compliance order* required by the Act. DOE’s goal is to have all plans and orders in place by October 1995.

#### 1.4 Proposed Site Treatment Plan Organization

The BCLDP *Proposed Plan* follows the same format as the *Proposed Plans* of other DOE sites to facilitate cross-site comparisons. The *Proposed Plan* is organized in two separate, but integrated volumes. The *Background Volume* provides the detailed discussion of the options: it contains information on the waste streams and treatability groups a particular treatment option or options would address and describes

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uncertainties associated with that option, as well as the budget status of the option, and regulator and stakeholder input. The *Compliance Plan Volume* is a short, focused document containing the preferred options and schedules for implementing the options and is intended to contain all the information required by the Act. The *Plan Volume* also contains a mechanism to implement the *Plan* and establish milestones that will be enforced by the Order. It references, but does not duplicate, details on the options in the *Background Volume*.

*Section 1.0 and 2.0* in both *Volumes* contain introductory material relevant to the purpose of the *Volume*. The *Background Volume* contains general information on the *Draft Plan* and the site in section 1.0 and provides top-level assumptions and a description of the process used to determine the preferred options in section 2.0.

*Sections 1.0 and 2.0* of the *Compliance Plan Volume* propose certain administrative provisions appropriate for implementing the *Plan* when approved. These include provisions such as the approach to setting milestones, updates to the *Plan*, additions or removals to waste streams covered by the *Plan*, and funding considerations. It is expected that the specific language will be developed in conjunction with the regulatory agency and may eventually be expanded to address other administrative provisions or incorporated into a separate consent order.

*Sections 3.0 through 5.0* discuss the preferred option or options for low-level mixed waste, mixed transuranic waste, and mixed high-level waste, and each volume discusses the same waste streams and options in parallel sections. The *Background Volume* discusses the waste streams, technology needs, and uncertainties and other details on the preferred options. In the *Compliance Plan Volume*, the sections include proposed schedules, to the extent feasible, as required under the Act. The BCLDP expects to have low-level mixed waste, and possibly transuranic mixed wastes, but does not expect to have any high-level mixed waste.

*Section 3.0, "Low-Level Mixed Waste,"* is further organized according to the availability of capacity and treatment technology to treat the waste stream:

- 3.1 Waste Streams for Which Technology Exists
- 3.2 Waste Streams for Which Technology Exists But Needs Adaptation or for Which No Technology Exists
- 3.3 Mixed Waste Streams Requiring Further Characterization or For Which Technology Assessment Has Not Been Done.

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The options identified are those that appear technically able to treat the waste, given the limits in the data on waste streams and facilities, particularly facilities in the early planning stages. The intention has been to narrow the field of feasible options.

*Sections 4.0 and 5.0* on TRU and high-level mixed wastes have similar formats. BCLDP generation of TRU mixed waste is possible but not anticipated based on current knowledge. Consequently, this section is abbreviated and will be expanded in a future version of the STP if necessary. BCLDP generation of high-level mixed waste is not expected.

*Section 6.0* describes wastes expected to be generated in the future within the next five year period, including environmental restoration wastes and wastes resulting from D&D activities.

*Section 7.0* contains information regarding the future compliant storage of mixed wastes, such as RCRA Part B status and facility capacities both present and future.

*Section 8.0* describes a process being followed by DOE and the states for evaluating options for disposal of mixed waste treatment residues. Although the Act does not require disposal to be covered in the *Plans*, DOE is including disposal information to be responsive to the states' request that disposal be addressed and to support state discussions. *Section 8.0* explains why the BCLDP is not being considered as a disposal site

## **1.5 Other Activities Related to PSTP Development**

Other DOE efforts are closely linked to STP development. These include the Mixed Waste Inventory Report; activities conducted pursuant to the National Environmental Policy Act (NEPA); and compliance and cleanup agreements containing commitments relevant to mixed waste.

### **1.5.1 Mixed Waste Inventory Report**

The Mixed Waste Inventory Report, (MWIR) required by the Act, provides an inventory of mixed waste currently stored or generated, or expected to be generated over the next five years, at each DOE site, and an inventory of treatment capacities and technologies. The *Interim Mixed Waste Inventory Report*, published by DOE in April of 1993, provided information on a waste stream-by-waste stream basis for each DOE site that generates or stores mixed waste. DOE made updated waste stream and capacity data available to the States and EPA in June 1995. The June 1995 MWIR data represents the best record of DOE's mixed waste inventory in mid-1995.

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However, because data is constantly being refined and the processing of D&D waste is on-going, waste stream information in BCLDP's *Proposed Plan* may differ somewhat from the June 1995 MWIR data.

### **1.5.2 The Programmatic Environmental Impact Statement for Waste Management**

DOE is preparing a Programmatic Environmental Impact Statement (PEIS) which will be used to formulate and implement a waste management program in a safe and environmentally sound manner and in compliance with applicable laws, regulations and standards. The PEIS is intended to present to the public, states, EPA, and DOE an understanding of impacts to human health and the environment together with the costs associated with a wide range of alternative strategies for managing the DOE's environmental program. The PEIS is examining the following waste types and activities: high-level, transuranic, mixed low-level waste, low-level, and hazardous. The analysis for the PEIS will evaluate decentralized, regional, and centralized approaches for storage of high-level waste; treatment and storage of transuranic waste; treatment and disposal of low-level and low level mixed waste; and treatment of hazardous waste.

Development of the Waste Management (WM) PEIS is being coordinated with the preparation of the Site Treatment Plans under the Federal Facility Compliance Act. Information being generated to support the WM PEIS (e.g., hypothetical configurations, preliminary risk analyses, and cost studies) is shared with states to support STP discussions. The Draft WM PEIS will not identify a preferred alternative (i.e., configuration) for mixed waste facilities since this will be evolving in consultation with the states and EPA through the STP process. However, the WM PEIS analyses of potential environmental risks and costs associated with a range of possible waste management configurations will provide valuable insight as the public, states, and DOE discuss using existing facilities and constructing new mixed waste facilities to treat mixed waste.

## **2.0 METHODOLOGY**

### **2.1 Assumptions**

All sites used the following assumptions to provide for a degree of consistency in the preparation of the Draft STPs, even though not all assumptions may be fully applicable for a given site. The assumptions were developed as a part of the "*Draft Site Treatment Plan Development Framework*" and reflect review and comment from the states and EPA.

- (1) High-level waste will continue to be managed according to current plans at each site (i.e., Hanford, West Valley, Savannah River, INEL). Primarily due to potential safety concerns, HLW will not be transported off-site except as a treated, stable waste that is ready for disposal. The STPs will not change management strategies for HLW.
- (2) Regarding TRU Waste, the PSTPs reflect DOE's current strategy that the Waste Isolation Pilot Project (WIPP) will open and receive a No Migration Variance. The PSTPs identify characterization, processing, and treatment of TRU waste to meet the current WIPP Waste Acceptance Criteria. Consistent with this policy, treatment of mixed TRU waste necessary to meet LDR standards will not be included in the PSTPs at this time. However, DOE's policy regarding WIPP is under review and may change in the future. The PSTPs will provide for the flexibility to modify activities and milestones regarding TRU waste to reflect potential future changes in DOE policy.
- (3) DOE recognizes some states' preference for treatment of all wastes on-site. Where appropriate, existing on-site capacity will be utilized before new facilities are constructed. When on-site treatment or use of commercial or mobile facilities is not practicable, the use of existing off-site capacity, as well as the construction of new facilities, will be considered.
- (4) Sites in the same state will investigate the practicality of consolidated treatment facilities.
- (5) Mixed waste resulting from Environmental Restoration (ER) and D&D activities will be factored into planning activities and equity discussions, particularly where utilization of facilities identified in the PSTPs is being considered for managing ER and D&D waste.
- (6) The PSTP will address all wastes in the updated Mixed Waste Inventory Report (MWIR). Any changes/corrections to the MWIR waste stream and treatment facility information will be explained in the PSTP.
- (7) On a volume basis, the large majority of DOE's mixed waste will be treated on-site. Because of transportation concerns and costs, this generally includes process waste water, and some explosives and remote-handled wastes. At a minimum, Richland (RL), Oak Ridge (OR), Idaho (ID) and Savannah River (SR) will have on-site facilities to treat the majority of their wastes.
- (8) The Environmental Management PEIS is being prepared in parallel with the development of the STPs. The PSTP process will provide information to the PEIS. Each site will prepare any necessary specific NEPA documentation

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before proceeding with a given project or facility ordered by the State or EPA as a result of the STP process.

- (9) In support of DOE's cradle-to-grave waste management philosophy, disposal site location and criteria will be factored into state equity discussions, waste treatment facility designs, and the characteristics of the final waste forms.

## 2.2 Preferred Option Selection Process

Because the Draft Site Treatment Plans (DSTPs) were prepared by the sites using a "bottom-up" approach, the resulting treatment configuration, when viewed from a national level, contained many redundancies and inefficiencies. In developing the PSTPs, an assessment was performed to determine what accommodations are necessary to blend the "bottom-up" DSTPs into a more sensible national configuration of treatment systems. To facilitate this assessment, DOE established the Options Analysis Team (OAT) comprised of site representatives and members of the Headquarters' FFCA Task Force. The OAT coordinated their efforts with the States, through the National Governors' Association, to ensure the national mixed waste configuration reflects both the States' and DOE's concerns. As part of this evaluation, the impacts of implementing the emerging PSTP configuration, as well as alternative configurations, were evaluated.

The focus of the OAT's efforts has been on mixed low-level waste (MLLW). While High Level Waste (HLW) and Mixed Transuranic Waste (MTRU) are also covered by the FFCA, the strategies for managing these wastes have already been established. However, DOE recognizes that modifications of these strategies may be needed as the programs evolve and new information becomes available.

In combination, the DSTPs form a mixed waste treatment configuration which was the baseline for the OAT analyses. Changes to the PSTP configuration proposed by the OAT are based on the following analyses:

1. Review of the PSTP baseline configuration to identify redundant and technically inefficient proposed treatment options.
2. Identification of alternative treatment configurations that emphasize key State and DOE concerns.
3. Evaluation of the PSTP baseline and alternate configurations against key evaluation areas to determine what combination of treatment options results in a configuration that best meets DOE's, the States', EPA's and other stakeholder' concerns.

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The results of the initial OAT analysis were shared with each of the sites and the State regulators, as well as DOE management. The OAT worked for several more months responding to State requests for additional analysis, incorporating ongoing site analysis, and responding to comments. The resulting configuration, as presented in the PSTPs, is DOE's best attempt to balance competing DOE and stakeholder interests.

### 2.3 Coordination with Regulatory Agencies and Other Stakeholder

The Act offers an opportunity for DOE and the state and EPA regulators who will be approving the *Plans* to work cooperatively toward defining mixed waste treatment plans. As requested by the states, DOE signed a cooperative agreement in August 1993 with the National Governor's Association (NGA) to facilitate the DOE-to-State interactions. To date, the NGA has sponsored several national meetings between DOE, the states, EPA, and the Indian Nations to discuss the development of the STPs. Two working groups have been formed to discuss technical issues related to treatment and disposal of mixed waste. NGA and the states have also reviewed and provided comment on the guidance documents discussed in *Section 2.2*.

The Act requires the states and EPA to provide for public involvement after the *Final Proposed Plans* are submitted in March, 1995. It is the intent of the Department and the Ohio EPA to involve the public at an early stage in the development of the Site Treatment Plans. To the extent possible, public interactions related to mixed waste issues will be incorporated into existing public involvement programs at each DOE site. Staff from Ohio EPA have been invited to participate in public interactions at the larger DOE sites in Ohio where information related to the Federal Facilities Compliance Act was presented. Additionally, the DOE and Ohio EPA coordinated the distribution of copies of the plan to interested members of the public, and shared copies of all comments.

A summary of interactions conducted with Ohio EPA and other stakeholder regarding the PSTP is as follows:

- In October 1993, the *BCLDP Conceptual Site Treatment Plan* was submitted to the Ohio EPA.
- Since October 1993, several meetings have been held with representatives from the five Ohio DOE sites to discuss mixed waste treatment needs, capacity and technology development that would be common according to waste streams at each of the various Ohio sites.
- On March 22, 1994, a meeting was held with the Ohio EPA and the five Ohio sites to discuss the progress that is being made on the development of treatment technologies for wastes that are common to the Ohio sites.

- On April 14, 1994, a meeting was held to update the Ohio EPA on progress that is being made among the Ohio DOE sites on the Ohio treatment options. A presentation was made by EM-50 for mobile "skid-mounted" treatment modules that could be used by two or more of the Ohio DOE sites consecutively, thereby reducing or eliminating the need for intersite or interstate shipment of wastes for treatment.
- On June 6, 1994, a meeting was held with the Ohio EPA and the five Ohio DOE sites. A presentation was made on the progress being made with the Ohio treatment options.
- On August 30, 1994, The Draft Site Treatment Plan for the BCLDP was issued to Ohio EPA, USEPA Region V, interested stakeholder, public reading rooms and local libraries.
- On October 6, 1994, a meeting was held with Ohio EPA and the five Ohio DOE sites. Discussed were some preliminary comments OEPA had on the PSTP's, including the perceived lack of substance to the Ohio treatment option.
- On November 1, 1994, the BCLDP received from Ohio EPA site specific comments on the DSTP. These comments were incorporated into the Proposed Site Treatment Plan (PSTP).
- On April 4, 1995, the BCLDP submitted the PSTP to Ohio EPA.
- On April 26, 1995, the Ohio EPA published a notice of availability of the PSTP and made the PSTP available to the public upon request. The Ohio EPA did not receive any comments on the BCLDP Proposed Site Treatment Plan.
- On June 22, 1995, the BCLDP received comments on the PSTP.
- On July 26, 1995 a meeting was held at Ohio EPA Central District Office between representatives of DOE, Battelle and Ohio EPA. The BCLDP submitted a revised PSTP where most of OEPA's June 22 comments were addressed. Discussions were held on unresolved comments.

All the DOE mixed waste generators in Ohio will continue to conduct periodic meetings to develop a common approach to address areas of wastes stream classification and treatment and public participation. BCLDP anticipates periodic meetings with the State of Ohio and the other DOE facilities to review activities related to implementation of the Federal Facility Compliance Act (FFCA). One or more public meetings will be held at Ohio DOE sites to present the requirements of

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the FFCA, discuss the treatment strategies to be presented in the STPs, and solicit feedback on the preferred options presented. Battelle's future interactions with stakeholder are outlined in the *BCLDP Public Participation Plan* supplement (Appendix). Additionally, the BCLDP will work with state officials to establish a distribution list for the final *Site Treatment Plan* to meet the statutory requirement that the State make copies of the plan available to the public and consider any comments received.

A related on-going public information activity has been the public hearings on Battelle's application for a Part B Hazardous Waste facility. Although not directly related to the Federal Facility Compliance Act, the outcome of the Part B hearings has had an indirect effect on the future storage capacity of BCLDP radioactive mixed wastes. Battelle has since withdrawn from the Part B permit application process and is reverting to Large Quantity Generator status. As a portion of the Part B process, public and regulatory interaction activities have included tours of the former Battelle Part A storage facilities, BCLDP < 90 day accumulation areas, and satellite accumulation areas. Group members which have toured these facilities include the University Area Commission, Harrison West Society, University Community Association, members of the Ohio Attorney General's Office, Battelle permit opposition committee, community emergency response teams, Victorian Village Society, Columbus Department of Health, and representatives from various local news media. These tours are in addition to annual scheduled facility inspections conducted by the Ohio EPA, Central District Office officials.

At the National level, DOE has presented information on the development of the STPs to the Environmental Management Advisory Board (EMAB) and will continue to provide information to the EMAB and other national stakeholder groups as the STPs are developed. Other national level stakeholder involvement may be conducted after submission of the Proposed STPs.

Because of the statewide and national scope of the selection of mixed waste treatment technologies, all of the DOE sites within the State of Ohio have been working together as appropriate when providing information to the public. For the BCLDP this means providing project fact sheets and having technical representatives available to participate in briefings and public meetings sponsored by other DOE sites.

The mixed wastes which may possibly be produced as a result of decontamination activities have been subdivided into treatability groups as shown in section 3. These groups have been identified based on historical knowledge of facility operations, and the level of site characterization conducted to date. This grouping has been applied uniformly for sites in the State of Ohio, to provide a consistent data base upon which to make decisions regarding consolidated treatment and technology development. Because the exact volume of mixed wastes from decontamination and decommissioning of the Battelle facilities is speculative prior to detailed characterization and analysis,

a range is given for each treatability group. The lower end of the range is based on waste in less-than-ninety day storage and satellite accumulation areas at the time the table was updated. The maximum waste volume (mass) is based on conservative estimates of building rubble, soil, and other residues which may have both hazardous and radioactive residual contaminants. Care is taken in the planning of each major decontamination campaign to avoid the generation of mixed wastes.

## 2.4 Characterization of Mixed Wastes

First and foremost, wastes are characterized for the presence of radionuclides by gamma spectroscopy. If the matrix is proven to have an isotopic concentration of less than detectable limits or levels of isotopes less than the NRC-approved BCLDP volumetric release criteria, the waste is released by the project to Battelle Columbus Operations (BCO) Waste Management for any further characterization and disposition.

Since RCRA regulations apply to containerized wastes, samples are generally taken from waste vessels ranging from 1 to 55 gallons in volume. When preliminary data for a building designated to be decontaminated indicates elevated levels of chemical contamination or historical process knowledge warrants, a specific accumulation container for the suspect mixed waste is provided by BCLDP waste management. Once the entire waste stream is containerized, a representative sample is taken. However, if a finite Solid Waste Management Unit exists, such as a sump or wood flooring which is destined to be removed in the process of D&D activities and is suspected to be RCRA regulated, pre-characterization sampling will be performed in-situ to facilitate the proper packaging, labelling and accumulation once it is removed. The respective sample is taken in accordance with EPA SW-846, under the guidance of established operating procedures.

Battelle has contracts with two separate outside analytical laboratories, Ecotek Laboratory Services, Inc. and IT Corporation Analytical Services. Both laboratories possess an NRC license to handle radioactive material in addition to performing EPA SW-846 test methods.

The analytical method selection is based upon the process knowledge of the activities conducted in the formerly utilized process area or laboratory, historical data, and pre-characterization "wet-chem" screening tests. These screening tests are utilized when there is little or no historical data on the specific waste stream. Test examples include pH measurement, presence/absence of cyanides and sulfides, flashpoint, air/water reactivity, presence/absence of peroxides or chlorine in oil. These tests can give indications on the group of compounds which need further analysis to confirm or refute that the radioactive waste is RCRA hazardous. All contract laboratory data is reported QC level III, which includes a matrix spike, matrix blank, and all of the raw data affiliated with the specific sample analysis for result validation.

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Another factor in method analysis selection is the disposal site testing requirements. There are analyses which are State imposed or required under the sites' waste acceptance criteria such as leachable zinc and copper, percent moisture, or to perform totals in addition to leachable metals.

## 2.5 Waste Minimization

(The following information is summarized from the *Waste Minimization and Pollution Prevention Awareness Plan for the BCLDP*, Revision 2, April 21, 1994.)

The *BCLDP Waste Minimization Plan* outlines the policies, goals, and responsibilities for waste minimization and pollution prevention for the BCLDP. Battelle Corporate Operations and the BCLDP have a strong commitment and ongoing effort to make waste minimization and pollution prevention a standard operating philosophy.

The objective of the waste minimization and pollution prevention program is to systematically eliminate or reduce the generation of waste during the BCLDP project, to prevent or minimize the release of pollution in any environmental medium, to make source reduction and environmentally sound recycling an integral part of the operating philosophy of the BCLDP. It also seeks to develop in all employees an awareness of environmental problems and encourage their participation in minimizing the generation of waste.

Pollution Prevention consists of methods to eliminate or reduce waste volumes prior to generation. The BCLDP is continually placing emphasis on the safe, economical and environmentally sound disposal of waste material. The environmental impact of waste disposal is also taken into account while choosing methods and disposal sites. This is reflected by this project's continuous development and optimum utilization of the disposal options available today.

### 2.5.1 Pollution Prevention

#### 2.5.1.1 Past Activities

In the past, the philosophy was to decontaminate and radiologically release materials for transfer to the BCO property disposal group for final disposition. The remaining radioactive waste was then shipped to the Westinghouse Hanford Company (WHC) in Washington for storage or disposal. This practice was modified in 1993 to include the use of SEG in Oak Ridge Tennessee for volume reduction prior to disposal. Currently these same options remain in use with the addition of Envirocare of Utah as a safe economical disposal option.

### **2.5.1.2 Current Pollution Prevention Activities**

The principal techniques are product substitution and process changes. The BCLDP continually strives to improve upon its current practices and to identify additional areas in which it can reduce pollution at the source. Some examples of current BCLDP practices are listed below.

#### **2.5.1.2.1 Product Substitution**

The BCLDP has restricted the use of cleaners and solvents within radiological control areas to those which are non hazardous and non toxic. All purchased chemical products are required to under go a review, using the associated Material Safety Data Sheet (MSDS) to determine if hazardous constituents are present. Substitution with non-hazardous equivalents occurs whenever possible.

#### **2.5.1.2.2 Process Changes**

The following are examples of process changes which have been implemented to reduce or eliminate the generation of waste.

- Grit blasting and mechanical grinding have been used as alternatives to chemical decontamination.
- Soil pipe drain lines containing mercury contamination are now being honed and decontaminated to reduce the volume of mercury contaminated waste.
- Soil pipe drain joints sealed with poured lead are now being broken. The lead is removed and radiologically released to reduce the volume of contaminated lead entering the mixed waste disposal stream.
- Packaging, such as boxes, crates, and cushioning materials are now removed from new materials prior to entering radiological control areas, reducing the potential for creating contaminated waste unnecessarily.
- Training is provided and great care is taken to prevent the co mingling of contaminated oil and chemical wastes with uncontaminated wastes.

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## 2.5.2 Current Waste Minimization Activities

Waste minimization consists of techniques applied to waste after it is generated. Many opportunities are currently in use on site and off site. Examples of on site techniques to reduce waste volumes include separation of radioactively contaminated and non-contaminated items, decontamination of contaminated items, removal of contaminated parts from an item and reclaiming potential waste materials. Off site techniques include volume reduction through super compaction, incineration and metal melting.

### 2.5.2.1 Segregation to Prevent Commingling

The practice of segregating to prevent cross contamination is best demonstrated by the BCLDP chemical disposal process. Contaminated chemicals are segregated from uncontaminated chemicals. Those chemicals which are uncontaminated are radiologically released and transferred to the BCO hazardous waste group for reuse or disposal, thereby reducing the quantities of chemical waste generated by the BCLDP. Field sampling evaluations are performed as applicable to determine whether potential hazardous wastes meet the regulatory criteria to be categorized and regulated as hazardous waste. Radiologically contaminated chemical waste is further segregated to comply with various disposal site criteria. Similar emphasis is placed on the importance of preventing cross contamination throughout the entire waste segregation process.

### 2.5.2.2 Separation of Hazardous Components

Whenever feasible, hazardous components are removed from waste to reduce the volumes of hazardous waste. For example, decontamination of mercury from drain lines creates a relatively small quantity of mercury sludge waste and a large quantity of cast iron drain line which can then be disposed of separately. Pipe joints sealed with poured lead are broken and the lead is removed. In many cases the lead is radiologically released, then transferred to the BCO hazardous waste group for disposition. Florescent light bulbs, mercury vapor light bulbs and vacuum tubes are also decontaminated when necessary and radiologically released, further reducing the quantities of hazardous wastes.

### 2.5.2.3 Recycling and Reuse

Valuable equipment is radiologically released whenever feasible. Non contaminated items are transferred to the BCO property disposal group for reuse throughout Battelle, recycling through off site concerns, or release to staff for home use through a sealed competitive bid process. BCLDP participates in BCO programs for the collection of recyclable metals and office paper sent off site for recycling.

### 2.5.2.4 Off Site Volume Reduction

Off site volume reduction of low-level radioactive waste (not radioactive mixed waste) is performed through SEG in Oak Ridge, Tennessee. Volume reduction services provided to the BCLDP include super compaction at a volume reduction ratio of approximately 10:1, incineration of compactible and combustible materials at a volume reduction factor of approximately 42:1, and metal melting at a volume reduction factor of approximately 100:1. The ash from incineration, the slag from metal melting, and the super compacted containers are returned to BCLDP for shipment to the offsite disposal facility (Westinghouse Hanford Company). The blocks of cast metal are recycled through an internal DOE project.

## 3.0 LOW-LEVEL MIXED WASTE STREAMS

### 3.1 Mixed Waste Streams for Which Technology Exists (*Summarized in Table 3-1*)

The following is a description of the mixed-waste streams which have been identified by the project at this time. Based on knowledge of historical operations and the level of characterization performed to date, it is assumed that future mixed wastes encountered during decontamination activities will fall into these categories as well. The volumes indicated are subject to change as work proceeds and material is sent off-site for treatment and disposal. It is anticipated that D&D activities at the King Avenue facility will be completed by the fall of 1996. By this time, the majority of EM waste will have been generated and shipped off-site for treatment and disposal. The scheduled completion of D&D activities at the West Jefferson site is uncertain at this time. The schedule for initiation and completion of decontamination of the West Jefferson site is dependent on the funding received in fiscal year 1997 and beyond. Currently, two funding scenarios are being considered which result in significantly different schedules. At the "Target" funding level (presently the planning assumption), only surveillance and maintenance would be performed at the West Jefferson site between FY 1997 and FY 1999. Actual decontamination work would

Table 3-1 Mixed Waste Streams (Updated Inventories/Projections as of September 21, 1995)

Treatability Group	Waste Description	EPA Code	Current Inventory, King Avenue Accumulation Areas (Kg/m <sup>3</sup> )		1-Year Projected Generation	Current Inventory, West Jefferson Accumulation Areas (Kg/m <sup>3</sup> )		5-Year Projected Generation	Treat. Tech.
			Satellite	<90 Day		Satellite	<180 Day		
Lab Packs (Inorganic) BC-W001	Laboratory reagents in original containers (flammable metal powders, oxidizers)	D001	0/0.0	0/0.00	5.0/0.014	2.0/0.006	0/0.0	1.0/0.0003	DEACT.
Lab Packs (Organic) BC-W002	Oils with solvents, floor stripping compounds	F002 D001 D040 D029	0/0.0	35/0.007	0/0.0	3.7/0.002	0/0.0	14.8/0.008	INCIN. RORGs.
Elemental Lead BC-W003	Shielding blocks, weights, lead shielding contained in walls, casks, and lead shot	D008	6.0/0.007	0/0.0	20/0.014	0/0	0/0.0	1160/1.283	MACRO.
Inorganic Sludges/Particulates Drain Pipe BC-W004	Debris generated from decontamination of ductile iron and clay drain lines	D009 D008	0/0.0	818/0.629	2455/5.4	91/0.085	0/0.0	3272/6.0	AMLGM. MACRO.

EPA Codes come from the listings found in 40 CFR 265

INCIN. - Incineration  
DEACT. - Deactivation  
RORGs. - Recovery of Organics

MACRO. - Macroencapsulation  
AMLGM. - Amalgamation

Basis: Concentration based treatment standard: Waste Streams BC-W001, BC-W002  
Technology based treatment standard: Waste Streams BC-W003, BC-W004

All waste streams are Status 2 which is where technology exists, but without capacity on-site

be deferred until the year 2000, with completion planned for 2003. The second funding scenario assumes that sufficient resources can be applied to accelerate work at the West Jefferson site, consistent with a DOE strategy to eliminate its liability at a number of small or privately owned sites as rapidly as possible. Under this accelerated funding scenario, decontamination work will begin in FY 1997, allowing completion by the end of FY 1999.

The scope for the decontamination activities is defined in a baselined project plan. A detailed work plan will be prepared for each fiscal year's activity, based on the funding available. These annual work plans will form the basis of any notice to the State regarding changed schedules for implementing this STP.

Actions required for the treatment site to accept mixed waste from the BCLDP have been discussed with each site's operator, and are listed in the following sections. Where treatment facilities have not yet been constructed, it will be necessary to ship project mixed-waste for pre-treatment storage.

### 3.1.1 Lab Packs (Inorganic)

- *Lab Packs (Inorganic)*. Laboratory reagents in their original containers (flammable metal powders, oxidizers). RCRA Waste Code: D001.
- *Current Quantity in Satellite Accumulation :*  
 King Ave. = 0.0 kg/0.0 m<sup>3</sup>. One-year projected = 5.0 kg/0.014 m<sup>3</sup>.  
 West Jeff = 2.0 kg/0.006 m<sup>3</sup> Five-year projected = 1.0 kg/0.0003m<sup>3</sup>
- *Treatment Technology:* Deactivation
- *Characterization Level of Confidence:* High

#### 3.1.1.1 Description of Technology and Capacity Needs

Waste Stream Name:	Lab Packs (Inorganic)
MWIR No.:	BC-W001
LDR Treatment Standard:	Deactivate so the waste does not exhibit the characteristic of ignitibility
Technology Needed:	Deactivation
Capacity Required:	0.042 m <sup>3</sup> initially; approximately 0.208 m <sup>3</sup> by 1998

### 3.1.1.2 Preferred Option

Waste Stream Name:	Lab Packs (Inorganic)
MWIR No.:	BC-W001
Treatment Location:	Envirocare, Clive, Utah
Facility Name:	Mixed Waste Treatment Facility
Technology Needed:	Deactivation by stabilization
Actions Needed to Implement:	Treatability study.
Facility Status:	Operational

### 3.1.1.3 Alternate Options

Waste Stream Name:	Lab Packs (Inorganic)
MWIR No.:	BC-W001
Treatment Location:	Fernald, Ohio
Facility Name:	FM-S804
Technology Needed:	Deactivation by stabilization
Actions Needed to Implement:	RCRA Part B Permit Contract Amendment or OEPA Director's Finding and Order
Facility Status:	Planned

### 3.1.1.4 Schedule for activities to ship waste off-site:

This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

### 3.1.2 Lab Packs (Organic)

- *Lab Packs (Organic)*: RCRA Waste Code: D001, D040
- *Current Quantity in Accumulation* :

King Ave. = 35 kg/0.007 m<sup>3</sup> One-year projected = 20 kg/0.014 m<sup>3</sup>.  
West Jeff. = 3.7 kg/0.006 m<sup>3</sup> Five-year projected = 14.8 kg/0.008 m<sup>3</sup>

- **Treatment Technology:** Incineration, organic destruction

- **Characterization Level of Confidence:** High

#### 3.1.2.1 Description of Technology and Capacity Needs

Waste Stream Name: Lab Packs (Organic)  
 MWIR No.: BC-W002  
 LDR Treatment Standards: Deactivate so the waste does not exhibit the characteristic of ignitibility

Technology Needed: Incineration, organic destruction

Capacity Required: 0.511 m<sup>3</sup> initially; approximately 1.664 m<sup>3</sup> by 1998

#### 3.1.2.2 Preferred Option

Waste Stream Name: Lab Packs (Organic)  
 MWIR No.: BC-W002  
 Treatment Location: Oak Ridge, TN  
 Facility Name: K-25 TSCA Incinerator  
 Technology Needed: Organic destruction  
 Actions Needed to Implement: Variance to facility's Part B Permit. Contingency plan for residuals management.

Facility Status: Operating

#### 3.1.2.3 Alternate Option

Waste Stream Name: Lab Packs (Organic)  
 MWIR No.: BC-W002  
 Treatment Location: Idaho National Engineering Laboratory

Facility Name: WERF Incinerator

Technology Needed: Incineration

Actions Needed to Implement: Part B Permit

#### 3.1.2.4 Schedule for activities to ship waste off-site:

This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated.

Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

### 3.1.3 Elemental Lead

- *Elemental Lead*: RCRA Waste Code: D008 Currently exists as weights, shielding material and pipe joint filling. Surface radiation contamination may be removable by abrasion to reduce volume.

- *Current Quantity in Satellite Accumulation* :

King Ave. = 6.0 kg/0.007 m<sup>3</sup> One-year projected = 20 kg/0.014 m<sup>3</sup>.  
 West Jeff. = 0.0 kg/0.0 m<sup>3</sup> Five-year projected = 1160 kg/1.268 m<sup>3</sup>.

- *Treatment Technology*: Stabilization, Macroencapsulation

- *Characterization Level of Confidence*: High

#### 3.1.3.1 Description of Technology and Capacity Needs

Waste Stream Name:	Elemental Lead
MWIR No.:	BC-W003
LDR Treatment Standard:	Macroencapsulation so waste does not exhibit leachability characteristic
Technology Needed:	Macroencapsulation
Capacity Required:	1.282 m <sup>3</sup> by 1998

#### 3.1.3.2 Preferred Option

Waste Stream Name:	Elemental Lead
MWIR No.:	BC-W003
Treatment Location:	Envirocare, Clive, Ohio
Facility Name:	Envirocare of Utah, Inc.
Technology Needed:	Macroencapsulation
Facility Status:	Processing equipment on order
Actions Needed to Implement:	Modification of DOE contract with Envirocare and inclusion with the INEL lead processing project.

## 3.1.3.3 Alternate Option

Waste Stream Name:	Elemental Lead
MWIR No.:	BC-W003
Treatment Location:	Hanford, Washington
Facility Name:	WRAP I
Technology Needed:	Macroencapsulation
Actions Needed to Implement:	

## 3.1.3.4 Schedule for activities to ship waste off-site:

This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

## 3.1.4 Mercury Contaminated Particulate/Debris from Ductile Iron Drain Line

- *Mercury Contaminated Particulate/Debris from Ductile Iron and Ceramic Drain Lines: RCRA Waste Code: D008, D009*

- *Current Inventory:*

King Ave. = 818 kg/0.629 m<sup>3</sup> One-year projected = 2455 kg/5.4 m<sup>3</sup>.  
West Jeff. = 91 kg/0.085 m<sup>3</sup> Five-year projected = 3272 kg/6.0 m<sup>3</sup>

- *Treatment Technology: Amalgamation, Macroencapsulation*

- *Characterization Level of Confidence: High*

## 3.1.4.1 Description of Technology and Capacity Needs

Waste Stream Name:	Mercury Contaminated Particulate/Debris
MWIR No.:	BC-W004
LDR Treatment Standard:	Amalgamation and macroencapsulation so the waste does not exhibit the characteristics of leachability
Technology Needed:	Amalgamation and macroencapsulation
Capacity Required:	12.0 m <sup>3</sup> by 1998

### 3.1.4.2 Preferred Option

Waste Stream Name: Mercury Contaminated  
Particulate/Debris  
MWIR No.: BC-W004  
Treatment Location: Hanford, Washington  
Facility Name: WRAP I  
Technology Needed: Amalgamation,  
macroencapsulation

Facility Status: Under construction.  
Scheduled completion March  
1996. Scheduled to begin  
waste processing 1997.

### 3.1.4.3 Alternate Option

Waste Stream Name: Mercury Contaminated  
Particulate/Debris  
MWIR No.: BC-W004  
Treatment Location: *to be determined*  
Facility Name: *to be determined*  
Technology Needed: Amalgamation,  
macroencapsulation  
Actions Needed to Implement: Commercial treatability  
study

### 3.1.4.4 Schedule for activities to ship waste off-site:

This waste stream will be accumulated in satellite accumulation areas until such time that the waste quantity exceeds limits specified in 40 CFR 262.34(c)(1) or when the process generating this waste stream is terminated. Within 72 hours, the waste will be transferred to a less than 90 day storage area as in the case of the King Avenue site or a less than 180 storage area as in the current case of the West Jefferson facility. This chain of events will initiate scheduling for shipment to an offsite TSDF.

## 3.2 Waste Streams for Which Technology Exists But Needs Adaptation or for Which No Technology Exists

Not Applicable. All anticipated mixed wastes resulting from decontamination efforts are treatable with available technology.

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### **3.3 Waste Streams Requiring Further Characterization or for Which Technology Assessment Has Not Been Done**

Not Applicable. All anticipated mixed wastes resulting from decontamination efforts are treatable with available technology.

## **4.0 TRU MIXED WASTE STREAMS**

### **4.1 Description of Waste Streams**

Transuranic (TRU) wastes identified by the BCLDP are the debris and residue of examination/testing of spent nuclear fuel. TRU mixed wastes are not anticipated based on process knowledge; therefore, generation of TRU mixed-waste by the BCLDP is speculative at this time. Further characterization of the JN-1 hot cells is required to validate this assumption. Possible future sources of TRU mixed waste are contaminated lead shielding, and hydraulic fluids in hot cell doors and major equipment. Because of radiation levels, and inaccessibility, these items cannot be characterized until the hot cell clean-up is nearly complete, now scheduled for post-1999. Decontamination processes, such as chemical cleaning and filtration are likely to be effective in minimizing or preventing the generation of mixed TRU wastes.

### **4.2 Strategy for Managing Transuranic Waste**

Nearly all of the TRU waste in the hot cells derives from examination of spent nuclear fuel and will require remote handling techniques. The current plan is to ship all TRU waste off site for interim storage as the Waste Isolation Pilot Project (WIPP) is not scheduled to begin receiving remote-handled waste until after 2002. Any TRU mixed waste which may be generated will also be sent off site for appropriate treatment and/or storage. There will be no long-term on-site storage of TRU mixed waste inconsistent with OAC 3734-59-50. The specific site for interim storage or treatment will be identified once the characteristics of any mixed TRU waste is established.

In the event that a TRU mixed waste stream is identified during the decontamination effort at the West Jefferson site, the BCLDP will notify the Ohio EPA in accordance with the provisions of the Directors Findings and Orders. The notification of the Ohio EPA will include the nature of the TRU mixed waste stream, projected volumes, and the proposed treatment/storage site. The State may be requested to enter into discussions with the proposed receiving state regarding access.

DOE shall include information regarding progress in the national TRU mixed waste management program in the update to the STP required by the Director's Findings and Orders issued by OEPA in conjunction with of this Compliance Plan. This will include, as applicable and appropriate, the status of the no-migration variance petition, and information related to characterization, packaging, and/or treatment capabilities or plans for TRU mixed waste related to WIPP waste acceptance criteria.

## 5.0 HIGH-LEVEL MIXED WASTE STREAMS

Not applicable. The BCLDP does not anticipate generation of high-level wastes.

## 6.0 FUTURE GENERATION OF MIXED WASTE STREAMS

**6.1 Environmental Restoration Waste** - The BCLDP is a D&D Project (see 6.2).

**6.2 Decontamination and Decommissioning Waste** - All of the mixed wastes described in Section 3.0 are the result of decontamination and decommissioning activities. The mixed waste types and volumes described herein are speculative, based on knowledge of historic operations, analogs to completed D&D efforts, and preliminary characterization. See *Section 3.0* for information on current mixed waste projections by treatability group. It is likely that all future mixed wastes generated will fall into these groups as well. See *Section 2.4* for a discussion of the project's program to characterize waste media as part of the overall waste certification process.

**6.3 Other Wastes** - No "other wastes" are anticipated by the BCLDP. All BCLDP wastes will fall under *Sections 3.2 and 6.2*.

## 7.0 STORAGE REPORT

DOE is committed to managing waste in compliance with RCRA storage requirements in 40 CFR 264 or 40 CFR 265 pending the development of treatment capacity and implementation of the *Site Treatment Plans*.

For mixed waste to be shipped off-site for treatment, storage of the mixed waste before and after treatment will be arranged on a case-by-case basis between the shipping and receiving sites, in consultation with the affected states. Factors such as inadequate compliant storage capacity at the shipping site and the need to facilitate closure of the shipping site will be considered in proposing shipping schedules. Under the current arrangements with Hanford, residues resulting from treatment of BCLDP's mixed waste in the facilities current possession will be kept at the Westinghouse facility for disposal. The BCLDP is seeking to continue this arrangement. This would be true for any mixed wastes sent for LDR pre-treatment at Envirocare. Treatment residues from either SEG, Fernald or the TSCA

incinerator will be sent to the Hanford or Envirocare for disposal. The BCLDP does not have the ability to accept or store treatment residues on-site.

Between December 29, 1981, and January 1995 Battelle operated a hazardous waste facility under a Part A Permit which allows interim operation while the Part B Application has undergone reviews and revisions.

As of January 13, Battelle has decided to withdraw its' application for the Part B permit as a recommendation under a corporate cost reduction program. It was determined that the estimated \$250,000 needed to renovate the designated existing facility to Part B status and other associated costs was not worth the anticipated benefits. This action negates Battelle's interim Part A permit and all its requested revisions.

Battelle is in the process of converting into a large quantity generator and closing interim status storage areas. Therefore all RCRA hazardous wastes must be shipped to an off-site TSDF in less than 90 days. Federal and Ohio regulations state that any large quantity generator storing wastes in excess of 90 days, without an approved 30 day extension, are operating a storage facility (TSDF). Without the necessary permits, Battelle would be in violation.

To maintain compliance in light of Battelle's permit restrictions, the BCLDP operates a <90 accumulation area for project generated mixed waste. Wastes are characterized, profiled according to WHC's or Envirocare's waste acceptance criteria, and shipped prior to the 90-day storage limitation. This is done in a BCLDP area to ensure proper control of DOE radionuclides in the hazardous waste matrix.

A major concern of the BCLDP and stakeholder is that through the application of the FFCA implementing order, the BCLDP would no longer be able to send DOE-owned radioactive mixed waste to the Hanford facility, other DOE facilities or commercial mixed waste treatment facilities within the 90 day accumulation period. A worst-case scenario analysis would be that a newly defined DOE mixed waste stream would be identified with characteristics, such as PCB's in concentrations greater than 50 ppm, which no off-site TSDF could accept within the 90 day accumulation period. This could put Battelle in a situation where it would be defined as a storage facility, necessitating closure, and potentially initiating the Part B permit cycle over again from the beginning. Therefore, a TSDF or several TSDFs that can accept all BCLDP mixed waste stream is essential to maintain compliance.

## **8.0 PROCESS FOR EVALUATING DISPOSAL ISSUES IN SUPPORT OF THE STP DISCUSSIONS**

This section discusses the overall Department Of Energy (DOE) process for evaluating issues related to the disposal of residuals from the treatment of mixed low-level waste (MLLW) subject to the Federal Facilities Compliance Act (FFCA). The Battelle facilities are not among the sites being analyzed further for potential development as a disposal site

for residuals from the treatment of MLLW subject to the FFCA. This section outlines the disposal planning process developed by DOE, in consultation with the states, for evaluating potential options for the disposal of residuals from the treatment of MLLW. Importantly, because DOE is not currently developing MLLW disposal sites (with the exception of the Hanford Site) preferred alternatives or final destinations for disposal of treatment residuals are not known at this time. The results of this process are intended to be considered during subsequent planning activities and discussions between DOE and regulatory agencies.

## **8.1 Background**

The FFCA requires DOE to develop a plan for the treatment of mixed wastes. The Act does not impose any similar requirement for the disposal of mixed wastes after they have been treated; however, DOE recognizes the need to address this final phase of mixed waste management. The following process reflects DOE's current strategy for evaluating the options for disposal; the evaluation will increase understanding of the strengths and weaknesses of a site's potential for disposal but is not a site selection process. Ultimately the identification of sites that may receive mixed waste for disposal will follow state and federal regulations for siting and permitting, and will include appropriate public involvement.

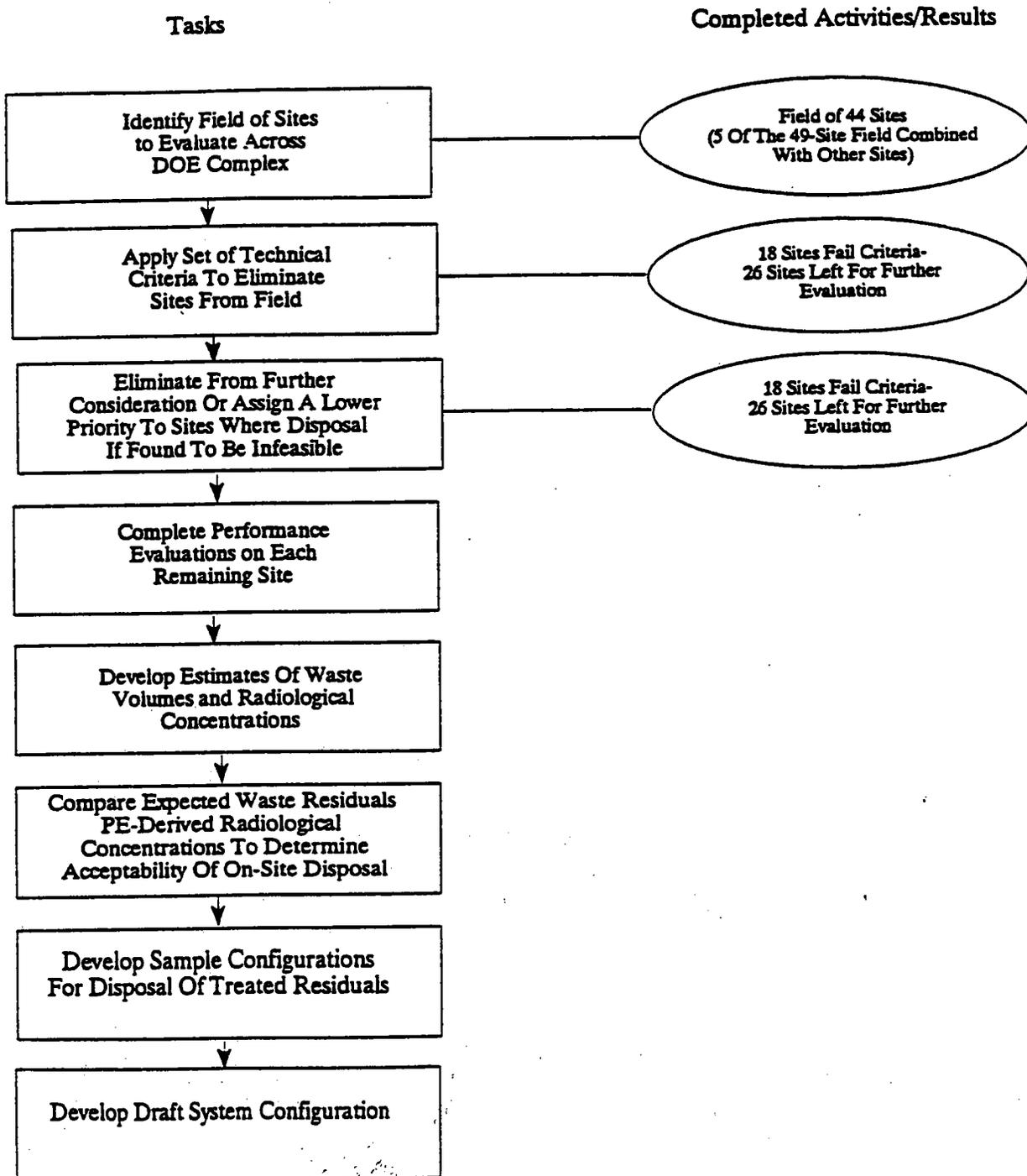
High-level and mixed transuranic wastes are among the mixed waste subject to the FFCA. Options for disposal of these mixed wastes are not identified by this process because there are established processes for studying, designing, constructing, and operating disposal facilities for these wastes.

The DOE has historically planned to develop MLLW disposal facilities at the six DOE sites currently disposing of low-level waste. These sites are Hanford, Savannah River, Oak Ridge Reservation, Idaho National Engineering Laboratory, Nevada Test Site, and Los Alamos National Laboratory. Currently, the Hanford Site has the only active permitted facility operated by DOE for the disposal of residuals from the treatment of MLLW. This plan has been re-directed in conjunction with the planning efforts of the FFCA to include the results of the disposal planning process (Figure 8.1), and the Environmental Management Programmatic Environmental Impact Statement (EM PEIS). The sites subject to evaluation under this process are the 49 sites reported to Congress by DOE in the Mixed Waste Inventory Report (MWIR), April 1993, that are currently storing or expected to generate mixed waste.

## **8.2 Disposal Planning Process**

Although the FFCA does not specifically address disposal of treated mixed wastes, both DOE and the States have recognized that disposal issues are an integral part of treatment discussions. A process was established to evaluate and discuss the issues related to the potential disposal of the residuals from the treatment of DOE MLLW at the sites subject to the FFCA, shown in Figure 8.1. The focus of this process has been to identify, from among the 49 sites that currently store or are expected to generate mixed waste, sites that are suitable for further evaluation of their potential as disposal sites. Sites determined to have marginal or no potential for disposal will

**Figure 8.1: Disposal Planning Process**



be removed or deferred from further evaluation under this process. The remaining sites will be evaluated more extensively. Ultimately, a number of sites are expected to be identified that are technically acceptable for disposal of treated residuals.

### 8.2.1 Activities to Date

#### *Site Grouping*

The initial step in this process was to examine each of the 49 sites to determine which sites, while individually listed in the MWIR, were in such geographic proximity that further analysis could address them as a single site. This grouping reduced the number of sites to 44, as follows:

- Idaho National Engineering Laboratory and Argonne National Laboratory (West) are located on a single federally-owned reservation near Idaho Falls, Idaho;
- The Sandia National Laboratories, California, and Lawrence Livermore National Laboratory are located on adjoining, federally-owned properties near Livermore, California;
- The Inhalation Toxicology Research Institute and Sandia National Laboratories, New Mexico, are located on the same federally-owned reservation, and;
- The Oak Ridge National Laboratory, Oak Ridge K-25 Site, and Oak Ridge Y-12 are all located within the federally-owned Oak Ridge Reservation, near Oak Ridge, Tennessee.

#### *Initial Site Screening*

At a joint meeting on March 3-4, 1994, DOE and the states agreed on three exclusionary criteria for further screening the 44 remaining sites. These criteria were developed by reviewing federal and state requirements regarding the siting of waste treatment, storage, and disposal facilities. In order to be evaluated further, a site:

- Must not be located within a 100-year floodplain;
- Must not be located within 61 meters (200 feet) of an active fault, and;
- Must have sufficient area to accommodate a 100-meter buffer zone.

The first criterion (100-year flood plain) is derived from both National Regulatory Commission (NRC) and Resource Conservation and Recovery Act (RCRA) requirements. The second criterion (active fault) was selected from

requirements found in RCRA which restrict the location of waste treatment, storage, and disposal facilities. The third criterion (sufficient area for 100-meter buffer) is derived from guidance from the Environmental Protection Agency (EPA), NRC, and DOE for the proper operation of waste facilities.

Evaluation of the 44 sites resulted in identification of 26 sites meeting the above criteria. At a joint meeting on March 30-31, 1994, DOE and the states agreed to remove from further evaluation those sites not meeting the screening criteria. Also at that meeting, DOE agreed to collect additional, more detailed information on the remaining 26 sites to identify additional strengths and weaknesses of the sites. It was agreed that DOE or any affected state may propose further elimination of sites from consideration following the site-specific evaluation. The Battelle Columbus facilities were eliminated in the initial screening as they are privately owned and fail in the floodplain and buffer criteria.

#### *Evaluation of the Remaining 26 Sites*

DOE and the states met on July 26-27, 1994, to discuss the site-specific data on the remaining 26 sites, and to consider proposals for eliminating additional sites from further evaluation. The focus of these discussions was to identify sites suitable for further evaluation under this process.

The criteria that DOE and the states used to eliminate sites from further evaluation at this stage were derived from three main groupings of considerations: Technical Considerations, Potential Receptor Considerations, and Practical Considerations. Each of the remaining 26 sites were evaluated against criteria in these groupings that included; soil stability and topography, precipitation and evapotranspiration, population, proximity to sensitive environment, land acquisition, government presence at the site, and regulatory constraints.

Sites with marginal or no potential for disposal, based on these criteria, were recommended for removal or postponement from further evaluation. As a result of the meeting, DOE and the states agreed to eliminate five sites from further evaluation due to their limited potential for disposal. These are:

<u>Site</u>	<u>State</u>
Energy Technology Engineering Center	California
General Atomics	California
General Electric Vallecitos Nuclear Center	California
Pinellas Plant	Florida
Site A/Plot M	Illinois

Additionally, DOE and the states agreed to merge the evaluation of Knolls Atomic Power Laboratory at Niskayuna, New York, and Knolls Atomic Power Laboratory at Kesselring, New York, due to their close, geographic proximity.

While not eliminated from further evaluation, it was agreed to lower the evaluation priority of an additional four sites. Issues such as the technical capabilities of the site, the volume of mixed waste that may be generated by the sites, and the acceptability of off-site waste contributed to a conclusion that further evaluation of some sites should not be a high priority. DOE and the states agreed to evaluate these sites in terms of their capability to dispose of their own mixed waste if no other off-site disposal options could be identified. These sites will not be considered for disposal of wastes from other sites, and may be eliminated from further analysis if sufficient evidence suggests the potential for disposal is too limited. The sites in this category are:

<u>Site</u>	<u>State</u>
Weldon Spring Remedial Action Project	Missouri
Brookhaven National Laboratory	New York
Mound Plant	Ohio
Bettis Atomic Power Laboratory	Pennsylvania

### *Performance Evaluation*

The performance evaluation being conducted for the 16 sites identified for further evaluation entails the collection of more detailed site-specific data related to the site characteristics. The performance evaluation methodology is based on the principles of radiological performance assessments and was developed by DOE performance assessment experts. Additionally, the evaluation will be based on RCRA-compliant engineered facilities. This information will be used to evaluate the sites and estimate the radionuclide concentration limits of waste that may be disposed at a given site. The performance evaluations were initiated in August 1994. The 16 sites for which performance evaluations are being prepared are:

<u>Site</u>	<u>State</u>
Lawrence Livermore National Laboratory, Site 300	California
Rocky Flats Environmental Technology Site	Colorado
Idaho National Engineering Laboratory	Idaho
Argonne National Laboratory	Illinois
Paducah Gaseous Diffusion Plant	Kentucky
Nevada Test Site	Nevada
Los Alamos National Laboratory	New Mexico
Sandia National Laboratories	New Mexico
Knolls Atomic Power Laboratory-Kesselring	New York
West Valley Demonstration Project*	New York
Fernald Environmental Management Project	Ohio
Portsmouth Gaseous Diffusion Plant	Ohio
Savannah River Site	South Carolina
Oak Ridge Reservation	Tennessee
Pantex Plant	Texas
Hanford Site	Washington

\* Because the West Valley Demonstration Project Act does not authorize the site to accept off-site wastes, the site will only be evaluated for disposal of on-site wastes.

## 8.2.2 Next Steps in the Evaluation Process

As illustrated in Figure 8.1, progress has been made in the planning of the disposal process. The following steps outline future activities that are either ongoing or are to be completed to facilitate an informed decision about the disposal of DOE MLLW. Coordination with the states will continue to ensure stakeholder input and to resolve concerns at the earliest possible stage.

### *Complete Remaining Performance Evaluations*

To date, 10 performance evaluations have been completed for the following sites: Savannah River, Oak Ridge Reservation, Idaho National Laboratory, Hanford, Sandia National Laboratories, Rocky Flats Environmental Technology Site, Los Alamos National Laboratory, Pantex Plant, Nevada Test Site, and Lawrence Livermore Laboratory. Performance evaluations for the remaining 6 sites are scheduled to be completed by June 1995. A progress report for the performance evaluation activities has been issued at approximately the same time frame as the final Proposed Site Treatment Plans (PSTPs) in order to keep the states and other interested parties informed of the progress.

### *Develop Estimates of Waste Volumes and Radionuclide Concentrations in Treated Residuals*

Once treatment methods for the MLLW waste streams are finalized through the FFCA process, estimates of the volumes and radionuclide concentrations of the treated residuals will be developed for all waste streams; this analysis will take place after the PSTPs have been approved by the appropriate regulatory agencies. These estimates are needed to compare to the performance evaluation-derived radionuclide concentration guides.

### *Compare Estimates of Radionuclide Concentration in Treated Residuals to Performance Evaluation-Derived Radionuclide Concentration Guides*

Radionuclide concentrations for each treated residual will be compared to those disposal values derived in the performance evaluation in this step. Comparing radionuclide concentrations in treated residuals with performance evaluation concentration guides will compare MLLW stream characteristics to potential disposal sites' capabilities. This evaluation will also include off-site DOE and commercial disposal site candidates for those treated waste streams which do not have on-site capabilities. Confirmation of the candidates streams and sites will be attained through detailed performance assessment efforts.

### *Develop Sample Configurations for Disposal of Treated Residuals*

An Options Analysis Team (OAT) approach will be employed to develop sample complex-wide configurations for the disposal of treated MLLW residuals. These configurations will take into account such technical issues as compatibility of radionuclides (both handled at the site and those considered acceptable by the performance evaluations), capacity to handle projected residual volumes, etc. Under the OAT approach, other types of issues will be weighed during the configuration discussions such as transportation costs and distances.

### *Develop a Draft Disposal System Configuration*

Using the sample configurations as a starting point, DOE will develop with state and stakeholder input, a draft disposal system configuration. This configuration will be the basis for determining future funding and schedules for proposed disposal facilities. The Final EM PEIS will provide bounding analysis of potential environmental impacts for the range of sample configurations considered. It will identify preferred sites for further development as disposal facilities. Following the issuance of the Record of Decision (ROD) for the EM PEIS, DOE may initiate site-specific National Environmental Policy Act (NEPA) evaluations for the proposed disposal facilities; initiate performance assessment analyses for compliance with DOE Order 5820.2A; and initiate processes for permitting disposal facilities.

## **8.3 Integration with the STP Process**

The FFCA does not require disposal to be included in the STPs; however, given the complex issues involved, DOE recognizes the importance of state input to facilitate resolution of issues related to disposal. Chapter 8.0 information is provided in the PSTP to continue to involve the states and inform them of DOE's continued work on the disposal issue. For more detailed information on the ongoing performance evaluation process, refer to the "Progress Report on Performance Evaluation of DOE Sites' Capabilities for Mixed Low-Level Waste Disposal." As the disposal planning process moves forward, further information will be provided and coordination with the states will continue.

# **APPENDIX**

## **Public Participation Plan for the Mixed Waste Site Treatment Plan**

**Battelle Columbus Laboratories Decommissioning Project (BCLDP)  
PUBLIC PARTICIPATION PLAN FOR THE  
MIXED WASTE SITE TREATMENT PLAN**

September 1995

**1. Plan Overview**

The objective of this Public Participation Plan, the fourth edition, is to describe how the Battelle Columbus Laboratories Decommissioning Project (BCLDP) will provide information to stakeholders about the release of the approved BCLDP Site Treatment Plan, as mandated by the Federal Facility Compliance Act (FFCA) enacted on October 6, 1992. One of the FFCA's requirements is that federal facilities work with the U.S. Environmental Protection Agency, state environmental agencies, and other stakeholders to provide comprehensive information on mixed waste\* inventories, treatment capabilities, and treatment plans. Even though the BCLDP is not being conducted at a federal site,\*\* it is included in this process and a Site Treatment Plan (STP) has been developed because any mixed wastes that result during the cleanup process are the responsibility of the U.S. Department of Energy (DOE). Additional information about the BCLDP FFCA process is in a fact sheet which has been provided to stakeholders.

Quantities and types of waste that result from the BCLDP and current treatment and disposal methods are described in the BCLDP Proposed STP issued in April 1995. The STP describes the BCLDP's strategy for managing and disposing of the minimal amount of mixed waste that will result during the decontamination and decommissioning work. All wastes will be sent either to DOE-managed or NRC-licensed off-site disposal facilities. No mixed waste treatment or disposal facilities currently exist at Battelle's facilities in Central Ohio and no such facilities are planned as part of the decommissioning project.

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\* Mixed waste is waste that contains both radioactive and other hazardous components.

\*\* The BCLDP work is co-funded by DOE and Battelle (90-10 percent, respectively) because most of the nuclear research and development was performed for federal agencies as part of the national defense effort. All decontamination and cleanup work is being conducted at Battelle-owned facilities where the BCLDP represents approximately three percent of all ongoing work.

DOE has demonstrated its commitment to involving the public in the process to develop STPs for mixed waste at each of its sites. The various earlier versions of the STP for the BCLDP have been used as early discussion documents with the Ohio Environmental Protection Agency (OEPA) and other stakeholders.

In March, 1993, the BCLDP issued a Public Information Plan for the project, and in September 1993, the first edition of this Activity Plan for Stakeholder Involvement in the Mixed Waste Site Treatment Plan was issued as a supplement to the Public Information Plan. An updated STP Activity Plan and was prepared in 1994, to which this is a further update.

## **2. Roles and Responsibilities**

The contact persons at the BCLDP for public participation information are:

Tom McClain, Director, Battelle Office of Communications, 614-424-7728, or  
Helen Latham, BCLDP Institutional Relations Manager, 614-424-4062, at  
Battelle  
505 King Avenue  
Columbus, OH 43201

and

Tom Baillieul, Acting Project Manager, 614-424-7226, at  
U. S. Department of Energy  
BCLDP Site Office  
505 King Avenue  
Columbus, OH 43201.

These members of the BCLDP team are responsible for informing the public and encouraging the participation of people or groups affected by or interested in the project, including the development of the STP. They are also responsible for implementing much of this plan.

The BCLDP is participating in the "Ohio Complex" planning process for implementation of the Federal Facilities Compliance Act, which includes representatives from the Ohio EPA and the Ohio Attorney General's Office. Comments received from the Ohio EPA on the Conceptual STP and subsequent STP versions were used to develop the approved STP. The "Ohio Complex" the sites are at Fernald, Mound, Ashtabula (RMI), and Piketon, as well as the BCLDP. Representatives of the "Ohio Complex" meet regularly to ensure consistency in the STP and in stakeholder interactions.

BCLDP has provided the public information materials and various versions of the STP to the DOE Chicago Operations Office, which then communicates/coordinates with the DOE-HQ Office of Waste Management and the Office of Public Accountability.

No resource issues or obstacles to implementation of this Public Participation Plan Supplement have yet been identified.

### **3. Issue Identification**

No anticipated regulatory or community issues have been identified in regard to the development of the STP for the BCLDP, other than a relative lack of interest among the public. This lack of interest is generally due to the very small quantity of mixed waste involved in the BCLDP, and to the fact that the waste would not be processed or stored onsite and is, instead, being removed from the sites.

For the BCLDP generally, stakeholder issues are outlined below.

#### **(a) Governmental:**

- In previous briefings, federal, state, and local officials have asked to be kept informed of progress, requested that the BCLDP proceed as scheduled, and wanted to be prepared to respond to any constituent concerns.

- The NRC and U.S. EPA have requested periodic briefings on progress or changes in schedules and funding, and expressed concerns that the work be accomplished as prescribed in regulations and in accord with Battelle's NRC license.

- Other governmental clients want the BCLDP to proceed with as little effect as possible on their work products and schedules.

#### **(b) Special interest groups:**

- Battelle management's chief concerns are that the BCLDP proceed with as little effect on other projects as possible and that buildings are made available for use without radiological restrictions as soon as possible.

- For the nearly 3,000 Battelle staff members who work at the Columbus and West Jefferson facilities, their major issues, in addition to those of Battelle management, are that their health and safety are protected, that the BCLDP

have as little impact on their day-to-day work as possible, and that the BCLDP not constrain Battelle's ability to obtain new projects.

- One of the adjacent neighborhood organizations at the Columbus site is the Harrison West Society, whose members and officers are interested in receiving periodic updates on all Battelle activities, including the BCLDP work. They and other nearby residents are also concerned about health and safety issues but view the BCLDP as more a positive than negative activity. (For more information about the areas near the BCLDP sites, see Appendix A).

- People in the town of West Jefferson and several subdivisions near the site, which is located in a rural area, are generally interested in activities at the site and several residents have requested information about the BCLDP on a periodic basis.

- Special interest groups, principally those related to environmental issues, have shown an interest in Battelle's research activities in general but have not expressed concerns about the BCLDP or any desire for deeper involvement.

- Industrial clients of Battelle want the BCLDP cleanup activities to be conducted with as little effect as possible on their work products and schedules.

#### (c) General Public

- Members of the general public in Central Ohio have expressed no issues related to the BCLDP or the STP, although health and safety are always primary concerns. The BCLDP is generally viewed as positive by the community at large because radioactive and hazardous materials are being removed from the site.

#### (d) Media

-Members of the print and broadcast media in Columbus and West Jefferson expect to be kept informed of major announcements and changes and periodically request status reports, special interviews, or tours regarding Battelle activities, including the BCLDP.

### 4. Planned Activities

Copies of all editions of the BCLDP STP were provided to area public libraries and a fact sheet about the STP was made available to the public. The fact sheet has been updated to be consistent with each version of the STP.

Plans to involve stakeholders in the approved STP after its release include informal briefings for Battelle staff; informal contacts with community groups and presentations to interested groups (by request only); informal contact with the mayors as well as U.S. Congressional and state legislative representatives for the two BCLDP site areas; and providing copies of the STP and fact sheet to libraries and governmental/oversight officials. BCLDP representatives have also offered to be available at the meetings/briefings for other "Ohio Complex" sites if requested by representatives of those sites. No news releases or media briefings are planned, except by specific request, because of the small quantity of mixed waste involved in the BCLDP.

Libraries that receive information about the BCLDP, including the STP, are:

- Columbus Metropolitan Library, Main Branch, 96 S. Grant Ave, and Northside Branch, 1423 N. High St., Columbus, OH
- State Library of Ohio, 65 S. Front St., Columbus, OH
- West Jefferson Public Library, 301 Main St., West Jefferson, OH

The approved BCLDP Site Treatment Plan is being released for approval by the state in October 1995. BCLDP staff will support Ohio officials in any public interactions they deem to be appropriate and will distribute copies of the approved STP to meet state requests.

Information materials are available for use during the interactions, including the BCLDP fact sheets, videos, and posters. The interactions described in this activity plan mirror communications underway since 1989 to describe the decontamination and cleanup of areas in 15 Battelle buildings located in Central Ohio.

### Stakeholders

The stakeholders with possible interest in the BCLDP are the internal and external institutions, groups, and individuals who may be interested in Battelle activities in general or who are potentially affected by the project's activities, principally the following: (a) Governmental, (b) Special Interest Groups (including Battelle staff), (c) General Public, and (d) Media.

(a) Governmental:

- U.S. NRC and EPA, Ohio Congressional delegation

- Ohio Governor's Office, Attorney General's Office, state senators and legislators from Central Ohio; the Ohio EPA and Department of Health
- Columbus and Franklin County officials, West Jefferson village, township, and Madison County officials.

(b) Special Interest Groups:

- Battelle management and staff (primary stakeholders)
- Residents in adjacent communities or neighborhoods
- Leaders of area community groups
- Environmental groups
- Other clients
- Other interested groups (e.g., business associations, technical associations, the Ohio State University).

(c) General Public:

- Nearby residents
- Other interested citizens.

(d) Media:

- Columbus area print and broadcast representatives
- Madison County daily print media and radio reporters
- Business press.

A stakeholder list for the BCLDP has been used to distribute information about the earlier versions of the STP (see Appendix B).

## Schedule

The schedule for upcoming activities is:

Release approved Site Treatment Plan	October 1995
Distribute revised fact sheet and STP to area libraries and governmental/oversight officials	Within 5 days after document release
Contact mayors, community groups, Congressional delegation, and state legislature representatives	Within 5 days after document release
Hold informal staff briefings	Fall/Winter 1995
Coordinate with other Ohio sites	Fall 1995
Make presentations to interested community groups or governmental representatives	By request
Media interviews	By request

## Objectives

The objective of these activities is to inform stakeholders, including the public, about the STP. However, because the quantities of mixed waste involved in the BCLDP are very small, a low level of public interest is expected. For this reason, public participation activities regarding the STP will be incorporated into the overall public information activities for Battelle and the BCLDP, as outlined in the *Public Information Plan for Battelle Columbus Laboratories Decommissioning Project*, February 1993. Communications about the BCLDP are integrated with other Battelle corporate communications to present a broad perspective to stakeholders.

### **5.0 Evaluation**

Because of the need to coordinate public information activities regarding the STP with overall BCLDP and Battelle communications, and because of the expected low level of public interest in the STP (due to the small quantity of mixed waste and the plans to remove it from the sites), the only evaluation of STP public participation efforts is the evaluation conducted for BCLDP

communications in general. These methods are outlined in Section 6 of the *Public Information Plan for Battelle Columbus Laboratories Decommissioning Project*, February 1993. Separate evaluation efforts for STP public participation are not planned.

## APPENDIX A

The BCLDP has two sites in the Greater Columbus area: the King Avenue Site and the West Jefferson Site.

### Description of Area Near the BCLDP King Avenue Site

The King Avenue site is located in the western central portion of the city of Columbus, Ohio. The 58.3 acre site, accommodating 21 buildings, is bounded on the north by King Avenue, Battelle Boulevard to the east, West Third Avenue to the south, and the Olentangy River to the west.

The area within two miles of the King Avenue site to the east and south consists of predominantly single-family urban residential neighborhoods. The Near Northside Historic District, listed on the National Register of Historic Places, encompasses these neighborhoods. The boundary of the district meets the boundary of the King Avenue site on the east and north, and the land owned by Battelle from Fifth Avenue south to Third Avenue is located within the district. Most of the residences in the Near Northside Historic District were built in the late 19th Century and early 20th Century, with some newer infill housing located on lots where older homes were demolished.

The area to the northeast and east of the King Avenue site, north of Fifth Avenue, is within the city's University District. This area includes neighborhoods known as Dennison Place (to the east) and the Elizabeth McMillan section (to the northeast). Although it has pockets of predominantly single-family residences, the University District is generally more densely populated than the area to the south of Fifth, which is a neighborhood known as Harrison West.

The Ohio State University, with a student enrollment of approximately 50,000 and a staff of approximately 29,000, is adjacent to the King Avenue site on the north. The area west of the Olentangy River consists mainly of small business and light industrial properties, with scattered residential patches.

### Description of Area Near the BCLDP West Jefferson Site

The West Jefferson site is located about 15 miles west of the King Avenue site and consists of a 1,000-acre tract that includes the Nuclear Sciences Area in the northern portion. The northern boundary of the site lies about a half mile south of Interstate Highway 70 and extends from the Georgesville-Plain City Road eastward to the Big Darby Creek. The eastern boundary of the site roughly

parallels the valley of the Big Darby Creek southward to the Conrail tracks, which constitute the southern boundary. The Georgesville-Plain City Road defines the western boundary of the site.

The area immediately adjacent to the West Jefferson Site has a low population density. The nearest residences to the Nuclear Sciences area (the area where the BCLDP is located at Battelle's West Jefferson Site) are two houses located 2,500 feet to the northwest and southwest, respectively. Camp Ken Jockey, a Girl Scout camp, is located on a bluff on the east side of the Big Darby Creek at a distance of 1,640 feet from the center of the site. Four thousand feet to the southeast, on the eastern side of the Big Darby Creek, the Lake Darby Estates residential subdivision currently contains a total of 965 single family units. A second subdivision, West Point, east of the Lake Darby Estates and Hubbard Road, has approximately 540 housing units.

The primary agricultural activity in the area is raising field crops such as corn and soybeans. Approximately 10 percent of the land area in agricultural use is devoted to pasturing beef cattle.

Two major highways, I-70 and I-270, are near the West Jefferson site. The junction of these highways, which lies near the eastern edge of the 10-mile perimeter around the Nuclear Sciences Area, has proven to be a popular area for industrial growth.

## APPENDIX B

### STAKEHOLDER LIST FOR THE BATTELLE COLUMBUS LABORATORIES DECOMMISSIONING PROJECT (BCLDP)

Updated September 27, 1995

#### Governmental

##### Federal Officials

Sen. John Glenn  
Federal Office Building  
200 N. High St., Room 600  
Columbus, OH 43215  
614-469-6697 Fax-7733

Sen. John Glenn  
ATTN: Chris Kline  
503 Hart Senate Office Bldg.  
Washington, D.C. 20510  
202-224-3353 Fax-7983  
-----

Sen. Mike DeWine  
200 N. High St., Room 405  
Columbus, OH 43215  
614-469-6774 Fax-7419

140 Russell Senate Office Bldg.  
Washington, D.C. 20510  
202-224-2315 Fax-6519  
-----

Cong. David L. Hobson  
OH District #7  
District Office: 220 Post Office Bldg.  
150 N. Limestone St.  
Springfield, OH 45501  
513-325-0474

1514 Longworth House Office Bldg.  
Washington, D.C. 20515  
202-225-4324  
-----

Cong. John R. Kasich, OH 12  
Federal Office Building  
Room 400, 200 N. High St.  
Columbus, OH 43215  
614-469-7318 No public fax

1131 Longworth House Office Bldg.  
Washington, D.C. 20515  
202-225-5355

---

Cong. Deborah Pryce, OH 15  
Federal Office Building  
Room 400, 200 N. High St.  
Columbus, OH 43215  
614-469-5614

221 Cannon House Office Bldg.  
Washington, D.C. 20515  
202-225-2015

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U.S. Environmental Protection Agency-Region 5  
RCRA Permitting Branch (HRP-8J)  
Connie L. Bogard, Environmental Engineer, 312-353-9184  
Dan Patulski, Corrective Actions Officer, 312-353-9184  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590  
312-353-9184

**State Officials:**

Gov. George V. Voinovich  
Riffe Tower  
77 S. High St.  
Columbus, OH 43215  
614-466-3555

Betty Montgomery, Attorney General  
State of Ohio  
State Office Tower, 17th Floor  
30 E. Broad St.  
Columbus, OH 43215  
614-466-3376

Donald R. Schregardus, Director  
Ohio Environmental Protection Agency  
1800 Watermark Dr.  
P.O. Box 163669  
614-644-2782

Contact: Robert Berger, Media Relations, 644-2160  
Alan Harness, Environmental Engineer, 644-3020  
Andy Kubalak, Inspector, Div. of Haz. Wst., 771-7505

Ohio EPA-cdo  
ATTN: Lundy Adelsberger

3232 Alum Creek Dr.  
Columbus, OH 43207-3417

Mike Shapiro, Legal Counsel  
Ohio Hazardous Waste Facility Board  
1700 Watermark Dr.  
P.O. Box 1049  
Columbus, OH 43266-0149  
614-644-2742

Contacts: April Morrison, Public Relations Coordinator, 644-2742  
Robert Teer, Technical Advisor, 644-3546  
Harry Sarvis, Technical Advisor, 644-3553

Dr. Peter Somani, Director  
Ohio Department of Health  
246 N. High St.  
Columbus, OH 43226-0588  
614-466-3543

Jerry Wray, Director  
Ohio Department of Transportation  
25 S. Front St.  
P.O. Box 899  
Columbus, OH 43215-0899  
614-466-2335

Senate President: Stanley J. Aronoff

House Speaker: Jo Ann Davidson

State Sen. Robert R. Cupp (West Jefferson)  
State Capitol  
Columbus, OH 43215  
614-466-5981

State Sen. Eugene J. Watts (King Avenue)  
State Capitol  
Columbus, OH 43215  
614-466-5981

State Rep. Otto Beatty, District 21  
State Capitol  
Columbus, OH 43215  
614-466-5343

State Rep. Joe Haines, District 74  
State Capitol  
Columbus, OH 43215  
614-466-2038

State Rep. Amy Salerno, District 23

State Capitol  
Columbus, OH 43215  
614-466-1896

Ohio Biological Survey  
1315 Kinnear Rd.  
Columbus, OH 43212-1192

**Local Officials:**

Mayor Gregory S. Lashutka  
City of Columbus  
City Hall, 90 W. Broad St., 2nd Floor  
Columbus, OH 43215  
614-645-7671

President John Kennedy  
Columbus City Council  
City Hall, 90 W. Broad St., 2nd Floor  
Columbus, OH 43215  
614-645-7380

City Attorney's Office  
Dan Drake, Chief Environmental & Utilities Attorney  
Columbus City Hall  
90 W. Broad St., 2nd Floor  
Columbus, OH 43215  
614-645-7385

Mike Pompili  
Deputy Director  
Columbus Health Department  
181 Washington Blvd.  
Columbus, OH 43215  
614-645-6280

Franklin County Commissioners  
373 S. High St.  
Columbus, OH 43215  
614-462-5258

University Area Commission\*  
Howard Skubovius, President  
Columbus Department of Development  
99 N. Front St.

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Note that area commissions (the University Area Commission and Victorian Village Commission) in the City of Columbus are city-government commissions, designated by city code, with appointments made by the mayor. Although these commissions consist primarily of neighborhood residents and property owners, they are regulatory and semi-regulatory bodies, not "neighborhood associations."

Columbus, OH 43215  
614-261-7507 (W)  
262-8010 (H)

Victorian Village Commission\*  
Terry Sherburn, Chairperson  
213 W. 1st Ave.  
Columbus, OH 43201  
614-443-5675  
614-299-8960

Mayor James Miles  
Village of West Jefferson  
23 E. Main St.  
West Jefferson, OH 43162  
614-879-5333

West Jefferson City Council  
23 E. Main St.  
West Jefferson, OH 43162  
614-879-7363

Madison County Commissioners  
Madison County Courthouse  
P. O. Box 618  
London, OH 43140  
614-852-2972

Madison County Department of Health  
Madison County Courthouse  
13 N. Oak St.  
London, OH 43140  
614-852-3065

### Interest Groups

#### **Community Groups**

Harrison West Society  
c/o Craig Copeland, President  
465 1/2 Vermont Place  
Columbus, OH 43201  
614-299-3737

Dennison Place Association  
c/o Tim Wagner, President  
1279 Hunter Ave.  
Columbus, OH 43201  
614-291-3337

University Community Association  
c/o Kevin Gallagher, President  
243 E. Lane Avenue  
Columbus, OH 43201  
614-294-2338 (H)

University Community Business Association  
Pasquale Grado, President  
1898 N. High St.  
Columbus, OH 43201  
614-299-2866 (W)

Victorian Village Society  
c/o Pat Lewis, President  
677 Dennison Ave.  
Columbus, OH 43215  
614-224-5404 (H)

Short North Business Association  
Cleve Ricksecker, Executive Director  
40 W. Third Ave.  
Columbus, OH 43201  
614-421-1030 (W)  
297-7357 (H)

West Jefferson Community Association  
177 Fellow Ave.  
West Jefferson, OH 43162

### **Environmental Groups**

Citizens for a Better Skyline  
Christopher Steele, President  
780 King Avenue  
Columbus, OH 43212  
614-421-2201

League of Women Voters of Metropolitan Columbus  
Virginia Tuttle, Executive Director  
35 E. Gay St., Room 303  
Columbus, OH 43215  
614-221-1743

Ohio Alliance for the Environment  
Irene Probasco, Executive Director  
445 King Ave.  
Columbus, OH 43201  
421-7819

Ohio Environmental Council

Vicki Lee Deisner, Executive Director  
400 Dublin Ave., Suite 120  
Columbus, OH 43215  
614-224-4900

Ohio Public Interest Research Group (Ohio PIRG)  
John Rumppler, Director  
2060 North High Street  
Columbus, OH 43201  
299-7474

Protect Our Earth's Treasures (P.O.E.T.)  
Robin Russell  
P.O. Box 10156  
Columbus, OH 43201-0656  
299-9001

Sierra Club, Central Ohio Group  
Jeffrey K. Skelding, Director  
145 N. High St.  
Columbus, OH 43315  
461-0734

Sierra Club, Ohio Chapter  
145 North High St.  
Columbus, OH 43215  
614-461-0734

Toxic Action (Project of Citizen Action)  
Gary Smith  
17 Brickel St.  
Columbus, OH 43215  
614-224-4111

#### Libraries

Main Branch  
Columbus Metropolitan Library  
96 S. Grant Ave.  
Columbus, OH 43215

State Librarian  
State Library of Ohio  
65 S. Front St.  
Columbus, OH 43215

Librarian  
Northside Library  
1423 N. High St.  
Columbus, OH 43201

Librarian  
West Jefferson Public Library  
301 Main St.  
West Jefferson, OH 43162

**Local News Media**

**Print**

Associated Press  
Joe McKnight  
1103 Schrock Road #30  
Columbus, OH 43229

Business First of Columbus  
Jim Breiner  
200 East Rich Street  
Columbus, OH 43212

Chamber Advisory/Attache  
Editor  
37 N. High St.  
Columbus, OH 43215

Columbus Call and Post  
Editor  
109 Hamilton Avenue  
Columbus, OH 43203

Columbus Dispatch  
Gerald Tebben, Business Editor  
Scott Powers, Environmental Writer  
Mike Lore, Science Writer  
Ron Lietzke, Business Writer  
Mark Ellis, City Editor  
34 S. Third St.  
Columbus, OH 43215

Daily Reporter  
Vicki Oliver  
329 S. Front St.  
Columbus, OH 43215

Downtown This Week  
Jim Lodico, Editor  
92-A Northwoods Blvd.  
Worthington, OH 43235

Gannett News Service  
Bureau Chief

16 E. Broad St., Suite 1001  
Columbus, OH 43215

Gongwer News Service  
William Baird  
175 S. 3RD St. #230  
Columbus, OH 43215-5134

Madison Press  
Editor  
30 S. Oak St.  
London, OH 43140

Messenger Newspapers  
Editor  
3378 Sullivant Avenue  
Columbus, OH 43204

Ohio Chamber of Commerce  
Kelly R. Kinder, Director, Energy & Environment  
35 E. Gay St.  
Columbus, OH 43215

Suburban News Publications  
Martin Rozenman, Editor  
P.O. Box 29912  
Columbus, OH 43229

THIS WEEK Newspapers  
Executive Editor  
92A Northwoods Blvd.  
WORTHINGTON OH 43235

Electronic

WBNS-TV  
News Director  
P.O. Box 1010  
Columbus, OH 43216

WCMH-TV  
News Director  
3165 Olentangy River Rd.  
Columbus, OH 43202

WOSU-TV, Channel 34  
News Director  
2400 Olentangy River Rd.  
Columbus, OH 43210

WSYX-TV

Craig Helfant  
Assignment Editor  
1261 Dublin Rd.  
Columbus, OH 43215

Ohio Public Radio  
Bill Cohen, Bureau Chief  
State House Press Room  
Broad & High Sts.  
Columbus, OH 43215

WBNS-Radio  
News Director  
175 S. 3rd St.  
Columbus, OH 43215

WCOL-Radio  
News Director  
22 S. Young St.  
Columbus, OH 43215

WCOL/WXGT Radio  
News Director  
22 S. Young St.  
Columbus, OH 43215

WMNI/WRMZ Radio  
News Director  
1458 Dublin Rd.  
Columbus, OH 43215

WNCI-FM Radio  
News Director  
1 Nationwide Plaza, 2nd Floor, Suite 98  
Columbus, OH 43215

WOSU-Radio  
News Director  
2400 Olentangy River Rd.  
Columbus, OH 43210

WTVN-AM  
News Director  
1301 Dublin Rd.  
Columbus, OH 43215-7000

WVCO-Radio  
News Director  
4401 Carriage Hill Lane  
Columbus, OH 43220