Idaho National Engineering Laboratory

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT SITE-SPECIFIC PLAN FOR FISCAL YEAR 1993

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FOREWORD

The Idaho National Engineering Laboratory (INEL) is a U.S. Department of Energy (DOE) multiprogram laboratory whose primary mission has been to research nuclear technologies. Working with these technologies and conducting other types of research generates waste, including radioactive and/or hazardous wastes. While most of the waste treatment, storage, and disposal practices have been effective, some practices have led to the release of contaminants to the environment. As a result, DOE has developed (1) an Environmental Restoration (ER) Program to identify and, where necessary, cleanup releases from inactive waste sites and (2) a Waste Management (WM) Program to safely treat, store, and dispose of DOE wastes generated from current and future activities in an environmentally sound manner.

The Fiscal Year (FY) 1993 Site-Specific Plan (SSP) describes the plans for FY 1993 for the INEL's ER and WM programs as managed by DOE's Idaho Field Office (DOE-ID). The first chapter traces INEL's historical context and outlines the Laboratory's geographic and administrative configuration. The second chapter provides an overview of the remainder of the document, while the remaining chapters present DOE-ID's plans for specific programs and proposed activities. Additional details regarding these plans and activities are contained in the appendixes. A list of acronyms and a glossary have been provided for readers unfamiliar with the INEL's programs and terminology.

In response to the public's request for earlier input into the annual SSP revision process, a draft of this document was published in July 1992. This

decision was well received by the public and, more importantly, it provided the opportunity to incorporate many of the public's suggestions in this final SSP. Many of these suggestions resulted in significant revisions or additions to this document. Boxes labeled "Change from the Draft SSP" have been inserted throughout this document to indicate the location of major revisions.

Another significant change is the incorporation of DOE-ID roadmapping throughout this document. Roadmapping is a strategic planning activity that identifies issues which require resolution. Roadmapping is important because root causes of conflicts often require DOE to outline funding of projects to resolve the conflict. By including roadmapping discussions in the SSP and providing copies of the roadmaps in the Information Repositories as they are made available, the public will have the opportunity to discuss ER and WM projects earlier in DOE's planning cycle.

To provide more information about increased activity in specific programs, the following sections have been expanded: Transition Activities (in Chapter 4); Landlord Activities (Chapter 7); and Quality Assurance (Chapter 10). Three of the appendixes have also been revised: Appendix A, which now contains funding information by Activity Data Sheet for FYs 1992 and 1993 (this information was not available when the Draft SSP was published); Appendix B, which presents FY-1993 planned activities for each Operable Unit; and Appendix F, which contains DOE-ID's responses to comments received from the public, the state of Idaho, and DOE Headquarters. "Translating an Activity Data Sheet," which appeared as Appendix B in the Draft SSP, has

been removed because it is useful only in conjunction with the Activity Data Sheets. (The information is available with the Activity Data Sheets in the Information Repositories).

The public is encouraged to comment on this document and to participate in DOE-ID's planning and decision-making process. To comment on or to receive additional copies of this final FY-1993 SSP please contact:

INEL Site-Specific Plan
DOE Idaho Field Office
P.O. Box 2047
Idaho Falls, Idaho 83403-2047
Telephone: (208) 526-6864

ACRONYMS

ADS	Activity Data Sheet	EBR	Experimental Breeder Reactor
AEA	Atomic Energy Act	EG&G	EG&G Idaho, Inc.
ANL-E	Argonne National Laboratory - East	EIS	Environmental Impact Statement
ANL-W	Argonne National Laboratory - West	EPA	U.S. Environmental Protection Agency
ARA	Auxiliary Reactor Area	ER	Environmental Restoration
ARVFS	Army Re-Entry Vehicle Facility Site	ETR	Engineering Test Reactor
B&W	Babcock and Wilcox Idaho, Inc.	FFA/CO	Federal Facility Agreement and Consent Order
BORAX	Boiling Water Reactor Experiment	FFC Act	Federal Facilities Compliance Act
CAA	Clean Air Act	FY	Fiscal Year
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	HEPA	High-Efficiency Particulate Air
CFA	Central Facilities Area	HSWA	Hazardous Solid Waste Amendments
CFR	Code of Federal Regulations	HWMA	Hazardous Waste Management Act (Idaho)
COCA	Consent Order and Compliance Agreement	ICPP	Idaho Chemical Processing Plant
CWA	Clean Water Act	IDHW	Idaho Department of Health and Welfare
DOE	U.S. Department of Energy	INEL	Idaho National Engineering Laboratory
DOE-Chicago	U.S. Department of Energy-Chicago Field Office	IRC	INEL Research Center
DOE-HQ	U.S. Department of Energy-Headquarters	LCCDA	Liquid Corrosive Chemical Disposal Area
DOE-ID	U.S. Department of Energy-Idaho Field Office	LDR	Land Disposal Restrictions
		LOFT	Loss-of-Fluid Test
		MRS	Monitored Retrievable Storage

MTR	Materials Test Reactor	SWEPP	Stored Waste Examination Pilot Plant
NEPA	National Environmental Policy Act		
NRF	Naval Reactors Facility	TAN	Test Area North
NWCF	New Waste Calcining Facility	TRA	Test Reactor Area
OSHA	Occupational Safety and Health Administration	TRU	Transuranic
		TRUPACT	Transuranic Package Transporter
OU	Operable Unit	TSA	Transuranic Storage Area
PBF	Power Burst Facility	TSCA	Toxic Substance Control Act
PCB	Polychlorinated Biphenyl	TSF	Technical Support Facility
RCRA	Resource Conservation and Recovery Act	USGS	U.S. Geological Survey
RESL	Radiological and Environmental Sciences Laboratory	UST	Underground Storage Tank
RI/FS	Remedial Investigation and Feasibility Study	VOC	Volatile Organic Compound
ROD	Record of Decision	WAG	Waste Area Group
RSWF	Radioactive Scrap and Waste Facility	WEC	Westinghouse Electric Corporation
		WERF	Waste Experimental Reduction Facility
RWMC	Radioactive Waste Management Complex	WINCO	Westinghouse Idaho Nuclear Company
SDA	Subsurface Disposal Area	WIPP	Waste Isolation Pilot Plant
SSP	Site-Specific Plan	WM	Waste Management

CHAPTER 1

**INTRODUCTION
TO THE
INEL SITE-SPECIFIC PLAN**

INTRODUCTION TO THE INEL SITE-SPECIFIC PLAN

PURPOSE AND SCOPE

The Idaho National Engineering Laboratory (INEL) Environmental Restoration and Waste Management Site-Specific Plan (SSP) for Fiscal Year (FY) 1993 describes how the U.S. Department of Energy's Environmental Restoration and Waste Management Five-Year Plan for FYs 1994-1998 (the Five-Year Plan) will be implemented at the INEL. The Five-Year Plan provides the framework for bringing all Department of Energy (DOE) waste-related activities into compliance with applicable state and federal regulations, addresses ongoing waste management (WM) activities, and describes DOE's program for meeting its goal of cleaning up contamination at its facilities by the year 2019. DOE encourages and promotes the public's participation in planning solutions to the serious and long-standing issues of environmental restoration (ER) and WM at DOE's sites. The Five-Year Plan includes comments from state and local governments, affected Indian Nations, and federal regulators. This SSP incorporates comments and suggestions it received from the public, various agencies, and DOE-HQ throughout the text; Appendix F contains DOE-ID's written responses to these comments.

The SSP is revised each fiscal year to reflect changes in planning and budgeting. Although the Draft SSP released to the public in June 1992 presented planning information for FY 1993,

budget figures could not be included at that time because DOE's funding request had not been presented to Congress. However, the FY-1993 budget request is now included (see Table 2-1 and Appendix A). As shown in Figure 1-1, 62 percent of the INEL's FY-1993 total operating budget is dedicated to the ER and WM programs. While funding information is not available beyond FY 1993, tables with tentative milestones are provided. These tables provide estimated dates for achieving milestones if activities are carried out with baseline funding. The tables do not represent commitments, but rather are estimates of what can be accomplished given baseline funding.

Some facilities at the INEL have environmental or waste-related concerns that are not funded through this office; they are, therefore, not within the scope of this plan. This plan also does not cover safety and health programs funded by DOE through other programs, nor does it cover general operations at the INEL that do not relate to ER and WM. These and other programs and operations are covered in general terms in the INEL Institutional Plan, which discusses long-range plans and budgets. (The INEL Institutional Plan is available through the DOE-Idaho Office of External Affairs at (208) 526-1318. The Five-Year Plan is available through the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, Virginia 22161.)

The INEL SSP covers only those activities and programs that are under DOE-Idaho's (DOE-ID's)* and DOE-Chicago's offices of ER and WM. The relationship between the DOE-ID Office of ER and WM and the management and budget of other INEL programs is illustrated in Figures 1-1 and 1-2. (DOE-Chicago's relationship is illustrated in Figure 1-6.)

* Unless otherwise noted, references to DOE-ID also apply to DOE-Chicago with respect to Argonne National Laboratory-West, which is at the INEL.

A discussion of commitments in the FY-1993 SSP, along with the status of those commitments, is included in Chapter 2, "Overview of Waste Issues," to assist the reader in following the progress of ER and WM activities at the INEL. Each section of the SSP also contains "progress charts" adapted from information in Activity Data Sheets and DOE-ID roadmaps that graphically depict schedules and milestones for specific INEL programs. Progress charts indicate how ER and WM activities and budgets relate over time. The charts also show DOE-ID's intended schedule for achieving its cleanup goals.

1993 Operating Funding by Program Secretarial Officer

*Note: 80% of the amount designated for Environmental Restoration and Waste Management (50% of the total operating funding) is dedicated to WM, which includes the Corrective Activities, Transition Activities, and Landlord Activities programs; 20% (or 12% of the total operating funding) is dedicated to ER.

Figure 1-1. 1993 INEL Operating Budget by Program Secretarial Officer as a Percentage of the Total INEL Operating Budget. (Source: INEL FY 1993-1998 Institutional Plan)

Activity Data Sheets are planning tools that include individual project descriptions and information on funding, milestones, and budget reporting. Revisions of the Five-Year Plan and the SSP are based on Activity Data Sheets as well as on feedback gained from public involvement. Throughout this SSP, Activity Data Sheet numbers are given in footnotes to assist readers interested in following planning details.

The format and scope of the Activity Data Sheets was changed this year to encompass broader discussions of programs. The Activity Data Sheets are updated annually and are available at the INEL Information Repositories listed in Chapter 3, "Public Involvement." Information regarding the codes and abbreviations contained in Activity Data Sheets is also available at the Information Repositories.

Change from the Draft SSP

Because the information contained in the Draft Appendix B, "Translating an Activity Data Sheet," is only useful when looking at an actual Activity Data Sheet, the data has been removed from the SSP; the information is provided with the Activity Data Sheets at the Information Repositories.

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Figure 1-2. DOE Idaho Field Office Structure. Note: This SSP only covers programs funded through the Assistant Manager for ER and WM for DOE-Idaho and DOE-Chicago (ANL-W).

Figure 1-3. DOE Planning and Budget Process Flow Chart.

Figure 1-4. DOE Planning and Budget Process Time Line.

DOE'S FIVE-YEAR PLANNING PROCESS

As a federal agency, DOE receives its funding from Congress. The process DOE uses to prepare its budget request (Figures 1-3 and 1-4) and the manner in which DOE-HQ allocates the funds provided by Congress require planning several years in advance of the actual request. By the end of the first half of FY 1992 DOE had already developed its request for FY 1994 while, at the same time, Congress was considering the FY 1993 budget. The SSP for a given fiscal year is based on information developed to support the planning and budgeting process.

INEL Roadmaps

Roadmap development at DOE is a structured planning process. This process is basically a comparison of the "installation as it presently exists" with the "installation as DOE wants it to exist" and the identification of the issues that separate the two.

Roadmaps are living documents that logically depict how the division of ER and WM will reach its long-term objectives of conducting waste operations and completing environmental, remedial, and corrective actions in compliance with requirements.

Roadmap development is a three-phased process: Assessment, Analysis, and Issue Resolution. During the Assessment Phase, the current status and background of the installation are identified. During the Analysis Phase, key issues that could impact or hinder ER and WM activities are identified. Issue resolution activities are incorporated into ongoing and planned activities during the Issue Resolution Phase. The roadmaps provide a comprehensive snapshot of current plans and future needs of the various installations at the INEL.

The installations roadmapped to date at the INEL include the WM Program, the ER Program, the INEL High-Level Mixed Waste Program, and Land Disposal Restrictions Compliance.

The INEL is planning to expand the roadmap effort in the near-term to include an INEL Landlord roadmap; an INEL Installation roadmap (including Critical path, Resource Loading, and Public Involvement); and an Action Plan Crosscut.

Roadmaps will be used to update the next five-year planning process and the Activity Data Sheets for FYs 1994-1999. Assumptions contained in each roadmap will be validated and rolled into an INEL Installation Assumptions Document. Development of the following areas will be required to enhance the current roadmapping process:

- Technology Development Needs,
- Land Use,
- Transportation,
- Transition Planning,

- Prioritization of Issues,
- Human and Financial Resources,
- Public Participation, and
- Content (level of detail).

The INEL has been designated as a lead site for long-term human resource planning. This means that the current Roadmaps will be resource-loaded both from a human and financial standpoint. Roadmaps will be factored into public participation plans as part of the five-year planning process.

ER and WM Five-Year Plan

The first DOE-HQ Five-Year Plan covered FYs 1991 through 1995; it was released in August 1989. The Five-Year Plan outlines DOE-HQ's plans for accomplishing its goal of ensuring that risks to human health and safety and to the environment posed by past, present, and future DOE operations are either eliminated or reduced to defined, safe levels by the year 2019 for all DOE facilities around the country.

To accomplish this goal, DOE instituted a structured planning process. The Five-Year Plan puts in writing the steps, cost estimates, and timetables required over a five-year period to make progress toward DOE's long-term goal. The timetables given in the Five-Year Plan are contingent upon funding appropriations by Congress.

The Five-Year Plan is updated and generally is made available for public comment every summer. Comments received are used to assist in future planning and development of the following year's version. The Five-Year Plan released in January 1993 covered activities for FYs 1994-1998. This two-year offset is because DOE is already in its FY 1993 operating year and the FY 1994 budget has been submitted to Congress.

The INEL FY-1993 Site-Specific Plan

The FY-1993 SSP has several distinct purposes. The first is to outline DOE-ID's plans for the use of funds to be appropriated by Congress. The second purpose is to outline the plans for which DOE expects to request funding in FYs 1994-1998.

In response to public comments, the public's review of the annual SSP revision was moved to a point much earlier in the SSP's development. This allowed DOE-ID to consider the public's comments *prior* to finalizing the SSP. It is anticipated that subsequent annual revisions will continue to be provided to the public in draft form.

Activity Data Sheets

Activity Data sheets (ADSs) are the building blocks for DOE-ID's program planning. The information in the Five-Year Plan, the SSP, and the DOE budget request submitted to the Office of Management and Budget is based on these detailed project-specific documents. Because ADSs contain budget information, the Office of Management and

Budget would not allow DOE to release them until the Five-Year Plan was made public. The ADSs are now available at the Information Repositories listed in Chapter 3.

References to Activity Data Sheets in the FY-1993 SSP. Each ADS is numbered individually. These numbers are referenced throughout the SSP in sections where the content of the ADS is discussed. This should assist readers in finding specific ADSs when more information is desired. Appendix C is a table of all ADSs with a cross-reference to the old ADS number and a listing of the requirements it meets. Appendix E provides the same cross-reference along with anticipated National Environmental Policy Act documentation.

BACKGROUND OF THE INEL

Physical Environment

The INEL covers nearly 890 square miles (231,000 hectares) of dry, cool desert in southeastern Idaho at an average of 4,865 feet (1,483 meters) above sea level. The populated areas nearest to the site boundaries are Idaho Falls, 21 miles (35 kilometers) to the east; Blackfoot, 23 miles (37 kilometers) to the southeast; Pocatello, 44 miles (71 kilometers) to the south-southeast; and Arco, 7 miles (11 kilometers) to the west (see Figure 1-5). The INEL is in a belt of prevailing westerly winds, channeled locally by the terrain into a southwest-to-northeast direction.

The surface-water drainage system at the INEL is not crossed by any perennial streams. Very little water enters the INEL site by surface inflow. The occasional flow of water during spring run-off is managed with a system of flood-control diversion dams and channels. However, the INEL is supplied with a very large source of groundwater. The Snake River Plain Aquifer, estimated to contain in excess of one billion acre-feet of water, is an extensive body of water contained in the rock underlying nearly all of the eastern Snake River Plain. The aquifer consists of basalt flows with sedimentary interbeds. At the INEL the depth from the ground surface to the aquifer varies from about 200 to 600 feet (60 to 180 meters). Most of the water pumped from the aquifer is used for agricultural purposes, and to a lesser extent, for domestic and industrial purposes.

The eastern Snake River Plain is part of an extensive volcanic belt that extends from the Idaho-Oregon border to Yellowstone. Mapping of the surface geology and bore hole investigations have shown that much of the INEL area is underlain by basalt lava flows, erupted nonexplosively from small volcanic centers during the past 2-4 million years. Most volcanic vents on the INEL are more the 200,000 years old, but one

lava flow crossed what is now the southern INEL boundary about 13,000 years ago. Volcanic pulses were separated by long intervals of dormancy, marked by the deposition of sediment in lakes and streams, and by wind action. These deposits form the sedimentary interbeds that separate subsurface layers of basalt. The basalts and sediments vary in total thickness from a few feet to more than 3,700 feet beneath the southern INEL. The extensive Snake River Plain aquifer flows through these highly fractured, permeable basalt lavas in the upper part of the volcanic pile.

The eastern Snake River Plain is an area of complex geologic structure and history. The youngest basalt at the INEL is estimated to be between 45,000 and 145,000 years old. Studies show basaltic lava flows to a depth of at least 2,440 feet. Flows are interbedded with cinders, silt, sand, and clay. The basalt has relatively high permeability resulting from fractures and joints.

The eastern Snake River is surrounded by the seismically active Intermountain Seismic Belt, a zone of concentrated seismicity that extends from northwestern Montana through eastern Idaho, central Utah, and southern Arizona and Nevada and the Centennial Tectonic Belt, a zone of seismicity that extends from the Yellowstone Plateau westward into Idaho. The distribution of epicenters of earthquakes recorded from 1994 to 1989 (Richter magnitude > 1.5) indicates that the eastern Snake River Plain is relatively devoid of earthquakes. The INEL has maintained a seismic network (currently 24 seismic stations) for monitoring earthquake activity within and near the eastern Snake River Plain since December 1971. Earthquake data compiled by the INEL seismic network for a 19-year period from 1972 to 1991 indicate that 19 microearthquakes (magnitude < 1.5) have been located within or near the boundary of the eastern Snake River Plain. Both local earthquake monitoring by the INEL and the historical earthquake record indicate that the eastern Snake River Plain is aseismic relative to the surrounding seismically active regions.

INEL Major Facility Areas

Figure 1-5. Locations of Major INEL Facilities.

Site History

During World War II, the U.S. Navy used about 270 square miles of the eastern Snake River Plain as a gunnery range, and a portion southwest of that area was used by the U.S. Army Air Corps as an aerial gunnery range. The present INEL site includes all the former military areas and a large adjacent parcel withdrawn from the public domain.

The INEL was established in 1949 as a site where nuclear reactors, support facilities, and equipment could be safely built, tested, and operated—primarily to prove that the atom could be safely used to generate electric power. Prototypes of the nation's major commercial power reactor concepts (liquid metal cooled breeder, boiling water, and pressurized water reactors) were first built at the

INEL. Today, the INEL is one of DOE's principal centers for conducting nuclear energy research and development. The INEL has the world's largest and most varied collection of reactors, including research, testing, power, and ship propulsion reactors.

INEL'S MISSION

The INEL is a DOE multiprogram laboratory; its primary mission is to provide the nation with innovations in nuclear technologies and unique scientific and engineering capabilities in nonnuclear programs that provide commercialization potential or enhance the quality of the environment.

Areas of primary emphasis include nuclear reactor technology research and development, ER and WM, advanced energy production and utilization technology development, defense-related support, safety and health, technology transfer, education, and research and development.

Nuclear Reactor Technology Research and Development

The INEL provides nuclear energy research, technology development, safety, and related technical services for DOE, the Nuclear Regulatory Commission, and other federal agencies. It has historically been a leader in reactor technology development programs. Personnel at the INEL have designed, constructed, and operated 52 reactors and test reactor facilities to research fuels and materials, to test prototype reactors, and to offer military and commercial sponsors a technical basis for reactor safety design and regulatory policy decision making. Research continues on advanced reactor concepts and designs to conduct research and technical programs, including high-temperature gas-cooled reactor, advanced pressurized water reactor, and boiling water reactor technologies. Skills inherent in reactor research and technology application also support control system, computational analysis, human factor, and plant aging research. The INEL is seeking to expand its role in advanced reactor design and operations, nuclear space power and propulsion, medical reactor applications, radiation effects, and nuclear reactor applications to defense missions. Role expansion is also planned for work with the

Integral FAST Reactor, liquid metal reactor, and International Tokamak Experimental Reactor.

Environmental Restoration and Waste Management

ER and WM are top-priority missions within DOE and at the INEL. Pollution prevention is one of the primary drivers for the WM program at the INEL. Waste generated at the INEL is reduced in volume, classified, segregated, and placed in interim storage or permanently disposed of using environmentally acceptable technologies. A closely related mission is the research, development, demonstration, testing, and evaluation of environmental and waste-related technologies. The INEL mission includes support to the national DOE ER and WM program through the development and application of cost-effective technologies for the handling, storage, and disposal of nuclear, hazardous, toxic, and mixed waste. It also includes bioprocessing research and development to use biological materials in environmental cleanup actions and in processing selected types of waste materials. The INEL will increase its role in the decontamination and decommissioning of DOE facilities.

Advanced Energy Production, Conservation, and Utilization Technology Development

The development and application of advanced energy production, conservation, and utilization technologies in support of the National Energy Strategy is a significant INEL mission. Research and development at the INEL addresses the broad spectrum of energy conservation within the industrial sector and the development of renewable energy technologies. These include joint programs for advanced metal forming with the steel and aluminum industries, performance testing of industry-developed electric vehicles and their components, fusion energy safety research, and small hydropower and geothermal power production. The INEL concentrates on the interdisciplinary application of engineering and scientific disciplines to energy and related strategic-material problems of national importance. The INEL has recently broadened its participation in fossil energy programs, including coal preparation; advanced materials processing and synthesis; and oil, gas, and oil shale extraction. The programs emphasize development and application of advanced solutions to problems

facing DOE or industry. Industrial cooperation is sought at all program stages.

Defense-Related Support

Providing defense-related support to the federal government continues to be a key mission of the INEL. The Specific Manufacturing Capability Project that produces armor for the M1A1 Abrams Tank Program of the U.S. Army will continue to manufacture armor packages to meet Army requirements, and will assist the Army in research and development of new technologies related to tank survivability. Consideration will also be given to utilizing excess plant capacity in support of other activities that may fall within the capabilities of the plant equipment and processes. While its mission is changing, the Idaho Chemical Processing Plant (ICPP) has handled government-owned nuclear fuels for many years and will continue to store and safely process high-level mixed wastes. Because of its experience in nuclear energy and safety research, the INEL is being considered as a nuclear materials production and manufacturing site for Complex 21, the nation's reconfigured nuclear weapons complex.

Safety and Health

The INEL conducts its mission with the safety and health of its employees as its highest priority. The INEL has set a goal to be a good neighbor. All operations are conducted in a manner that will minimize impact to the environment.

Technology Transfer

Transfer of technology from government research programs to private industry is essential to enhance the nation's competitiveness in the world market. The INEL will help identify and disseminate information on its products, processes, and services for potential commercial applications.

Education

The INEL will help to prepare the scientific and technical work force of the future by offering educational activities for students and faculty from grade school to university levels. Continuing-education programs for employees are also vital for the continued success of the INEL's mission.

Research and Development

The INEL's research and development activities will focus on advanced reactor design, waste-related technologies, energy conservation and renewable energy technologies, fossil energy supporting technologies, biological processes, environmental issues, geoscience, robotics, radiation measurements and detection systems, synthesis and processing of materials, and chemical dynamics.

INEL'S ORGANIZATION AND ADMINISTRATION

The INEL is a government-owned site managed by DOE under the administration of three DOE field offices that share responsibility for conducting programs at the INEL: (1) the Idaho Field Office (DOE-ID), (2) the Pittsburgh Naval Reactors Office, and (3) the Chicago Field Office (DOE-Chicago). Five Management and Operations contractors support DOE's activities at the INEL: EG&G Idaho, Inc. (EG&G Idaho); Westinghouse Idaho Nuclear Company (WINCO); Babcock and Wilcox Idaho, Inc. (B&W); Westinghouse Electric Corporation (WEC); and Argonne National Laboratory-West (ANL-W). In addition, DOE-ID has many additional support contractors to provide other services. Figure 1-6 depicts the reporting relationships and responsibilities assigned to each DOE field office and to the major INEL contractors and facilities.

As the INEL Site Manager, DOE-ID is responsible for site services, environmental management, and overall safety and emergency-planning functions. DOE-ID provides some of these services directly; others are provided through EG&G Idaho. EG&G Idaho provides general support services for INEL; manages reactor safety experimental programs for DOE-ID and the Nuclear Regulatory Commission; and conducts other programs including ER, WM, geothermal, and energy conservation. EG&G Idaho also provides some assistance to other government agencies. WINCO operates the ICPP, which has been used to reprocess government-owned nuclear fuel but is undergoing a change in mission (see Chapter 4). B&W manages the Specific Manufacturing Capability program at Test Area North. All EG&G Idaho, WINCO, and B&W programs are administered by DOE-ID. ANL-W facilities at INEL are operated by the University of Chicago for DOE-Chicago.

Also located at the INEL are the Radiological and Environmental Sciences Laboratory, the INEL Project Office of the U.S. Geological Survey, and the Field Research Office of the National Oceanic and Atmospheric Administration Air Resource

Laboratory. In addition to conducting their own work, these groups and agencies assist DOE in environmental monitoring activities both on- and off-site. DOE-ID also administers research work at several off-site locations.

INEL Structure

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Figure 1-6. Reporting Relationships and Responsibilities at the INEL.

WASTE TYPES AT THE INEL

There are four broad categories of waste at INEL: nonhazardous, hazardous, radioactive, and mixed. WM activities at the INEL relate to the management of waste streams, which fall within one of the four broad categories of waste. Hazardous wastes are categorized according to the Resource Conservation and Recovery Act (RCRA) and are managed according to regulations established by the U.S. Environmental Protection Agency (EPA) and administered by the state of Idaho. DOE has its own standards as well. Strictly radioactive (no hazardous constituents present) wastes are managed in compliance with DOE Orders pursuant to the Atomic Energy Act (AEA) and in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) if they are generated by remedial action.

Nonhazardous Waste

Nonhazardous wastes at the INEL are nonhazardous, nonradioactive solid wastes disposed of in landfills and regulated by Subtitle D of RCRA. Regulations governing landfill operations dictate strict guidelines for nonhazardous (nonhazardous, nonradioactive) WM in accordance with state regulations implementing the provisions of RCRA.

Hazardous Waste

Hazardous waste is nonradioactive waste that has characteristics which may pose risks to human health or the environment if improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous wastes, as defined by RCRA, possess one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appear on special EPA lists. Radioactivity is not a characteristic considered hazardous under RCRA. Hazardous waste is managed according to RCRA requirements established by EPA and administered by the state of Idaho under the authority of the Hazardous Waste Management Act. At the INEL, hazardous waste is stored for up to 90 days at designated accumulation points (longer for satellite

accumulation areas) before being sent to a RCRA interim-status storage facility. It is then sent to an off-site commercial disposal facility.

Radioactive Waste

Low-Level Waste. Low-level waste is nonhazardous radioactive waste that is neither high-level waste, transuranic waste, spent nuclear fuel, nor special nuclear by-product material. Low-level waste is generally short-lived and is generally contact-handled, although some low-level wastes contain high levels of radioactivity and, therefore, require shielding and remote handling. Most low-level waste includes relatively short-lived radionuclides, although it may contain transuranic radionuclides in concentrations of less than 100 nanocuries per gram of waste. This amount of transuranic radionuclides is not considered high enough to warrant classification as transuranic waste and is part of the low-level waste definition. Low-level waste that contains less than 10 nanocuries of transuranic radionuclides per gram of waste is disposed of on-site using shallow-land burial techniques. Much of the volume of low-level waste at the INEL is in the form of contaminated materials and equipment.

Some waste that was originally presumed to be transuranic waste has been determined by assay to have concentrations of transuranic radionuclides below the 100 nanocuries per gram of waste limit for transuranic waste and is, therefore, considered low-level waste. This type of low-level waste is termed Reclassified Low-Level Waste and is generally above the 10 nanocuries of transuranic radionuclides per gram of waste restriction for shallow-land burial. One alternative being considered is to concentrate the low-level waste so that it may ultimately be included along with the transuranic waste proposed for disposal at the Waste Isolation Pilot Plant (WIPP).

Transuranic Waste. Transuranic waste is waste with radionuclides that are alpha-emitters and that have atomic weights greater than uranium, half-lives greater than 20 years, and concentrations exceeding 100 nanocuries per gram of waste. Some transuranic waste contains high levels of radioactivity and, therefore, requires significant shielding and remote handling. A geologic repository is the favored alternative for transuranic

waste disposal because of the waste's long-lived nature. Much of the transuranic waste stored at the INEL consists of contaminated clothing, laboratory ware, and equipment.

Before 1970, transuranic waste was buried in the Subsurface Disposal Area at the INEL. Since 1970, no burial of transuranic waste has occurred at the INEL. Current practices provide for temporary storage of transuranic waste in steel containers on above-ground asphalt pads.

Transuranic waste is currently stored and monitored at the Radioactive Waste Management Complex's Transuranic Storage Area and at ANL-W pending the availability of a disposal facility. The WIPP must undergo a test phase to determine whether transuranic waste stored throughout the DOE complex can be safely disposed of at the New Mexico facility. Transuranic waste generated before 1970 is not currently included in the WIPP plan. Efforts associated with cleanup of this waste may result in a determination that the best alternative is to stabilize the waste without retrieval, thus eliminating the need for WIPP. If retrieval and storage is required, either the WIPP plan will need to be revised to accept this waste or a new disposal facility identified.

High-Level Waste. High-level waste is radioactive waste material that results from the reprocessing of special nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from the liquid that contains a combination of transuranic radionuclides and fission products in concentrations requiring permanent isolation. The high-level waste classification is not determined by the level of radioactivity contained within the waste, but by the nature of the radionuclides in the waste, which remain radioactive for an extremely long time.

High-level mixed waste at the INEL requires considerable shielding, may be long-lived, contains hazardous constituents introduced during manufacture or processing, and is temporarily stored at the ICPP. Liquid high-level waste is converted to a calcined solid and ultimately will be disposed of in an off-site geologic repository. The issue of permanent disposal of high-level waste is being addressed at the national level. While this issue is being resolved, the INEL will provide safe

interim storage of its high-level mixed waste inventory.

Mixed Waste. Mixed waste is hazardous waste mixed with either high-level waste, low-level waste, or transuranic waste. Each type of mixed waste is defined separately according to its radioactive constituents (e.g., high-level mixed waste, low-level mixed waste, transuranic mixed waste). At the present time, mixed waste is managed in accordance with both AEA and RCRA requirements because it contains both radioactive and hazardous constituents. If mixed waste is treated by removing the hazardous constituents, the remaining radioactive waste is regulated by DOE Orders in compliance with the AEA. If the mixed waste is generated by remedial action it is handled in compliance with CERCLA both before and after any treatment. Mixed waste is stored at the Mixed Waste Storage Facility and within the ANL-W area. At the present time there are no facilities licensed or permitted for disposal of mixed waste generated at the INEL. The Waste Experimental Reduction Facility at the Power Burst Facility area is currently testing specific types and volumes of existing stored mixed waste. The remainder of the mixed waste awaits a future treatment or disposal option.

Spent Fuel

Although spent nuclear fuel is not designated as a "waste," it is included as a waste stream to provide

discussion of strategy. Spent fuel is currently stored at various locations throughout the INEL. Spent nuclear fuel destined for the INEL is the result of former agreements made with DOE to take ownership of the spent fuel at some point in time. Some of the spent fuel is a result of testing efforts performed by DOE.

While the INEL currently stores quantities of spent fuel, the ultimate strategy is to send these elements to a federal repository for disposal when such a repository is developed. Pending development of this facility, the INEL will ensure safe interim storage of the spent fuel.

Change from the Draft SSP

Previously, the discussion of spent nuclear fuel mentioned Monitored Retrievable Storage as an option for spent fuel at the INEL. Monitored Retrievable Storage units, however, are for commercial spent fuel and are not an option for government-owned spent fuel.

FACILITIES AT THE INEL

The INEL is divided into distinct and geographically separate functional areas. Each area conducts certain programmatic activities (fuel reprocessing, reactor operation, etc.) and/or support activities (offices, crafts, warehouses). Figure 1-5 identifies the facility areas at the site (support facilities are also located in Idaho Falls). A general overview of the areas and related facilities is presented below.

Figure 1-7. Radioactive Waste Management Complex.

Radioactive Waste Management Complex

The Radioactive Waste Management Complex (RWMC) (Figure 1-7) is located in the southwest part of the INEL. The RWMC was established in 1952 as a controlled area for disposal of solid radioactive wastes generated from operations at the INEL. In addition, the RWMC received radioactively contaminated wastes from the Rocky Flats Plant in Colorado and other DOE defense-related facilities. Those wastes were disposed of in shallow trenches and pits from 1954 to 1970.

Before 1970, radioactive wastes had only two classifications: high-level waste and low-level waste. Since 1970, new regulations classify waste contaminated with transuranic radionuclides, such as americium and plutonium, as transuranic waste. These wastes have been stored separately at the RWMC on asphalt pads in steel drums, steel boxes, and fiberglass-covered wooden boxes. Some of the waste buried at the RWMC before this new classification is contaminated with transuranic radionuclides. DOE-ID is still evaluating the best

way to address this buried waste situation; for a more detailed discussion of this situation, see Chapters 5 and 8.

Today, the RWMC provides WM facilities for the interim storage of transuranic waste and disposal of low-level waste. The RWMC also supports research and development projects dedicated to the advancement of transuranic waste interim storage, low-level waste disposal, buried waste remediation technologies, and ER.

There are two operating areas within the RWMC (see Figure 1-7). The Transuranic Storage Area is dedicated to the management of transuranic wastes including interim storage operations, certification, and in the future, shipment of waste to WIPP, and development of technologies in support of transuranic WM. The Subsurface Disposal Area is dedicated to permanent disposal of low-level waste generated at the INEL. Related research and development projects support buried waste, remediation technologies, and contaminant migration studies.

Figure 1-8. Idaho Chemical Processing Plant.

Idaho Chemical Processing Plant

In 1953 the Idaho Chemical Processing Plant (ICPP) (Figure 1-8) began processing spent reactor nuclear fuel elements to recover highly enriched uranium. Since that time, pilot plants, demonstration facilities, and new technology have been successfully operated and used at the ICPP. The Waste Calcining Facility at the ICPP began operations in 1963 and was the first plant-scale operation converting high-level radioactive liquid waste to solid form. The Waste Calcining Facility was operated until 1982, when it was replaced by the New Waste Calcining Facility.

The activities at the ICPP have resulted in a highly trained work force with a broad range of experience and demonstrated ability. This experience will prove invaluable in the transition to its new mission, which is to:

- Develop improved WM methods,
- Manage wastes from decontamination and decommissioning activities,
- Provide interim support for a variety of spent nuclear fuels, and
- Provide research and development support for the disposition of these fuels in a federal repository.

Figure 1-9. Argonne National Laboratory-West.

Argonne National Laboratory-West

The primary mission of Argonne National Laboratory-West (ANL-W) (Figure 1-9) is basic support of liquid metal reactor research and development including, specifically, the Integral Fast Reactor concept. ANL-W is situated in the extreme southeastern portion of the INEL. ANL-W consists of 40 primary buildings and approximately 45 support buildings with a work force of approximately 800.

The installation consists of several major complexes: the Experimental Breeder Reactor No. 2, the Transient Reactor Test Facility, the Zero Power Physics Reactor, the Hot Fuel Examination Facility, the Fuel Cycle Facility, the Fuel Manufacturing Facility, the Laboratory and Office, and the support complexes, such as the Radioactive Liquid Waste Treatment Facility, the Radioactive Scrap and Waste Facility, and the Sodium Process Facility.

Central Facilities Area

The Central Facilities Area (CFA) is unique in that its primary support function is not dedicated to any one program. The CFA is the principal location for bus, food, and medical services; the warehouse;

and other administrative functions. In addition, many waste operations management facilities are in this area, including the Hazardous Waste Storage Facility and the Solid Waste Landfill.

The Hazardous Waste Storage Facility is a facility where EPA-declared hazardous wastes can be stored temporarily pending shipment to a commercial, off-site, EPA-permitted hazardous waste treatment, storage, or disposal site. The Nonhazardous Waste Landfill will be closed in accordance with applicable regulations and replaced with a new landfill meeting new RCRA Subtitle D requirements.

Auxiliary Reactor Area

The Auxiliary Reactor Area (ARA) is located 7.5 miles (12 kilometers) east of the CFA. The facilities at ARA were constructed in 1957 to test portable power reactors for the U.S. Army. The program has been phased out and all reactors have been removed or dismantled. The buildings at ARA have been identified for decontamination and decommissioning.

All ARA facilities are now vacant except for intermittent small-scale testing programs.

Figure 1-10. Power Burst Facility.

Power Burst Facility

Six miles (9 kilometers) east of the CFA is the Power Burst Facility (PBF) area (Figure 1-10). This area was originally constructed for Special Power Excursion Reactor Tests that began in the late 1950s. The reactor support facilities have since been converted to support a number of programs, including the development of radioactive waste volume-reduction techniques and waste-immobilization research. The PBF is now being evaluated for a new purpose, Boron Neutron Capture Therapy, a cancer research/treatment program.

In addition to the PBF, there are three sub-areas

within the Waste Reduction Operations Complex (WROC). The Waste Experimental Reduction Facility, an interim status facility (under EPA's definitions), is primarily devoted to reducing the volume of low-level waste materials and some low-level mixed wastes through compacting, sizing, and incinerating operations. The Mixed Waste Storage Facility provides temporary storage of INEL-generated radioactive mixed waste that requires treatment, storage, or disposal. The Waste Experimental Reduction Facility Storage Building stores waste awaiting treatment at the Waste Experimental Reduction Facility, augmenting the capacity of the Mixed Waste Storage Facility.

Figure 1-11. Test Area North.

Test Area North

Test Area North (TAN) (Figure 1-11) is located in the northern portion of the INEL, approximately 27 miles (43 kilometers) northeast of the CFA. This area was originally established in the 1950s to support the U.S. Air Force Aircraft Nuclear Propulsion Program.

Today, the TAN includes the following facilities and activities:

- The Cask Testing Project, which obtains heat transfer and shielding data on casks used for interim storage of spent nuclear fuel.
- The Test Area North Hot Shop, which provides handling and analysis capability for irradiated materials evaluations and other highly radioactive operations that require hot cell and water pit type operating facilities.
- The Specific Manufacturing Capability Facility (operated by B&W), which performs classified work for national defense needs.
- The Water Reactor Research Test Facility, which includes the liquid sodium/potassium metal processing facility and Savannah River Flow Test.
- The Process Experimental Pilot Plant, which was originally intended to demonstrate waste processing, but which is now in standby status.

Figure 1-12. Test Reactor Area.

Test Reactor Area

The Test Reactor Area (TRA) (Figure 1-12) was established in 1952 with the development of the Materials Test Reactor. The development of two other major reactors, the Engineering Test Reactor and the Advanced Test Reactor, followed. The Materials Test Reactor was shut down in 1970, and the Engineering Test Reactor performed its last test in 1981. The Advanced Test Reactor, the only large test reactor now operating at the TRA, is one of the world's largest test reactors with an operating thermal power level of 250,000 kilowatts. The Advanced Test Reactor provides high neutron fluxes for material testing in support of DOE programs.

Chemical science and physics programs use a variety of laboratory facilities at the TRA. For research and testing, a hot cell operation is also maintained in support of these and other activities.

Idaho Falls Facilities

The major administrative and technical office support facilities for the INEL are located in Idaho Falls, approximately 21 miles (35 km) east of the site's eastern boundary. The computer support systems and the majority of INEL's non-nuclear research and development programs are also located in Idaho Falls. The Idaho Falls facilities that support the INEL consist of the DOE-ID Headquarters Building; the bus and vehicle parking lot; the Technical Support Area, which includes the Computer Science Center, the Technical Support Building, and the Technical Support Annex; the Keefer Office Park, which includes the Willow Creek Building, the INEL Technical Library, and the staffing and development classrooms located within the University Place facility; the INEL Research Center; and the Idaho Falls Warehouse facility. Several other office locations are used throughout the Idaho Falls area including the Lindsay Boulevard Complex and the Woodruff Avenue Complex. All of these facilities are maintained by DOE-ID and several INEL contractors.

REGULATORY OVERSIGHT

A variety of laws govern ER and WM at the INEL. Several agreements among DOE-ID, regulatory agencies, and governmental agencies have been signed to provide guidance on the implementation of various laws and regulations at the INEL. The Consent Order and Compliance Agreement (COCA) was one of these agreements; it has provided the umbrella for many of these laws since its implementation in 1986. The COCA, however, has been replaced by the Federal Facility Agreement and Consent Order (FFA/CO). Additionally, DOE has internal auditing groups known as "Tiger Teams." The most prominent agreements, agencies, and laws that affect WM at the INEL are described below.

Agreements

Federal Facility Agreement and Consent Order. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, federal agencies that have facilities included on EPA's National Priorities List are required to enter into agreements with the EPA. These interagency agreements are designed to expedite completion of remedial actions in response to the release or potential release of hazardous substances to the environment at those facilities.

On December 21, 1989, the INEL, under CERCLA, was added to the EPA's National Priorities List of Superfund sites. On December 9, 1991, the FFA/CO was signed and approved by the DOE, the EPA, and the Idaho Department of Health and Welfare. The goal of this agreement is to ensure that releases or threatened releases of hazardous substances at the INEL are thoroughly investigated in accordance with the National Contingency Plan and that appropriate response actions are undertaken and completed as necessary to protect human health and the environment.

State Monitoring Agreement. The State Monitoring Agreement is a voluntary agreement

between the state of Idaho and DOE-ID developed to assure the citizens of Idaho that their health and safety and the environment are being protected through the following programs and activities: independent monitoring of on-site discharges, ground water and air quality, and off-site radioactivity; waste minimization planning; evaluation of source reduction methods to reduce or eliminate INEL discharges of contaminants to the environment; risk of current and proposed activities; and accelerated remediation activities if warranted by health and technical considerations.

"463" Governors' Agreement. The "463" Agreement is a verbal cleanup agreement that has since been replaced by the signing of the FFA/CO. The "463" agreement was made between DOE-ID and the governors of Colorado, New Mexico, and Idaho in December 1988 during a meeting held in Salt Lake City, Utah, related to the opening of WIPP. The agreement committed DOE-ID to a \$463 million funding level for cleanup activities at the INEL over the six-year period beginning in 1989. Each year, DOE-ID consistently exceeded this commitment. As stated in last year's SSP, cleanup funding is now subject to the enforceable terms of the FFA/CO. For this reason the "463" Agreement is no longer applicable.

Consent Order and Compliance Agreement. In 1987, DOE-ID, EPA Region 10, and the U.S. Geological Survey signed a Consent Order and Compliance Agreement that addressed compliance with the RCRA regulations governing the past land disposal of hazardous waste at the INEL. The agreement contained an action plan designed to achieve and maintain compliance with RCRA requirements that address the release and/or potential release of hazardous components. This action plan called for the investigation of all sites that may have been used to dispose of hazardous wastes or that had possible spills of hazardous materials. As a result of comprehensive assessments, 368 potential hazardous waste units were identified. This specific agreement was superseded by the FFA/CO.

Assumption

The INEL will continue to manage wastes on-site, where generated, in accordance with DOE orders, the FFA/CO, CERCLA, RCRA, and National Environmental Policy Act regulations.

Agencies

Environmental Protection Agency, Region 10.

EPA Region 10 oversees DOE's compliance with CERCLA and other environmental protection laws and regulations at the INEL. As a party to the FFA/CO, the EPA is responsible for reviewing and commenting on, approving, or disputing any documents issued under the FFA/CO at a Waste Area Group where the EPA is the lead regulatory agency.

State of Idaho. Idaho's Department of Health and Welfare performs many of the same functions as the EPA and is responsible along with the EPA for ensuring compliance with RCRA. The state is a party to the FFA/CO and functions as lead regulatory agency at assigned Waste Area Groups. Funding will be provided to the state by DOE to support state performance of FFA/CO responsibilities.

With the enactment of the Federal Facilities Compliance Act, the state became the prime regulatory authority with respect to mixed waste storage. The state is required to respond to reports generated as a result of the Act and may perform annual inspections. Funding will be provided to the state of Idaho by DOE to support the state's performance of responsibilities pursuant to the Act and the FFA/CO.

Indian Nations. DOE-ID has signed a working agreement with the Shoshone-Bannock Indian Tribes, whose lands comprise the Fort Hall Indian Reservation south and east of the INEL. This agreement will help to ensure that the health and safety and environmental and cultural resources of the Tribes are protected. An additional DOE-ID objective is to assist the Tribes in maintaining economic self-sufficiency.

Laws

Resource Conservation and Recovery Act.

The Resource Conservation and Recovery Act (RCRA) is a federal law addressing the management of hazardous and nonhazardous solid waste. Subtitle C of the law addresses hazardous waste that is either listed on one of the EPA's hazardous waste lists or meets one of the EPA's four hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity (as measured using the Toxicity Characteristic Leaching Procedure). Management of wastes classified as RCRA hazardous wastes must meet stringent guidelines for environmental protection. These guidelines include regulation of transportation, treatment, storage, and disposal of RCRA-defined hazardous waste. Subtitle D of the law addresses the management of nonhazardous, nonradioactive, solid waste such as municipal wastes.

Change from the Draft SSP

Since the release of the Draft SSP, Congress passed and the President signed into law the Federal Facilities Compliance Act. The effects of the Act on ER and WM activities are outlined below.

Federal Facilities Compliance Act of 1992.

The Federal Facilities Compliance (FFC) Act modifies RCRA and includes a broad waiver of sovereign immunity for substantive and procedural requirements, including fines and penalties. The DOE is provided a three-year delay of the waiver of sovereign immunity for fines and penalties for violations under RCRA Section 3004(j) involving storage of mixed waste as long as DOE maintains compliance with other RCRA requirements. The FFC Act also allows non-discriminatory reasonable service charges associated with federal, state, interstate, and local regulatory programs, including inspections, monitoring, and the processing of permits.

The FFC Act modified RCRA to require DOE to develop mixed waste inventory reports and a "compliance" plan for developing treatment capacities for all mixed waste regardless of the time of generation. The FFC Act also requires three annual progress reports from DOE to Congress. In addition, the General Accounting Office is required to report to Congress on DOE's progress.

Idaho Hazardous Waste Management Act.

The Idaho Hazardous Waste Management Act provides the state authority to implement the provisions of RCRA and, therefore, provides the state with oversight authority for RCRA-related ER and hazardous WM activities at the INEL.

Comprehensive Environmental Response, Compensation, and Liability Act. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a comprehensive framework to deal with past or abandoned hazardous substances including radioactive substances that are a threat to human health and the environment. RCRA and CERCLA requirements can overlap. To fall under RCRA jurisdiction, for example, a substance must first be a "waste," which has a specific definition under the law. By contrast, CERCLA has jurisdiction over the release or threatened release of any "hazardous substance" to the environment. If a site meets the CERCLA requirements for designation, it is ranked along with other Superfund sites and listed on the National Priorities List. This ranking and listing is the EPA's way of determining which sites have the highest priority for cleanup.

National Environmental Policy Act. The National Environmental Policy Act (NEPA) requires all federal agencies to assess potential environmental impacts of major proposed federal actions, that is, those actions which may significantly affect the quality of the human environment. It is DOE's policy to integrate NEPA into activities undertaken pursuant to CERCLA wherever practical. DOE's implementation of this policy is not intended to represent a statement on the legal applicability of NEPA to ER activities conducted under CERCLA or other legal authority. Many ER and WM activities at the INEL may constitute major federal actions. To meet NEPA requirements for major proposed actions, DOE-ID may be required to complete either Environmental Assessments or Environmental Impact Statements (see Chapter 9, "Environmental Impact Assessment").

Atomic Energy Act. The Atomic Energy Act regulates development of nuclear energy, control of source by-product, and special nuclear material. This statute also established nuclear WM policy and established federal responsibility for the

development of repositories for the disposal of nuclear waste.

Other Laws. DOE complies with many other environmental statutes while conducting ER and WM activities. These statutes, which are administered by the EPA and the state of Idaho, include the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, and the Toxic Substance Control Act.

Tiger Team

The Tiger Team assessment program is a part of the implementation of former Energy Secretary Watkins' "Ten-Point Plan," designed to help create a culture of environmental, safety, and health accountability within DOE facilities. The Tiger Team audit groups are charged with determining the current status of compliance with all environment, safety, and health laws, regulations, and DOE orders at each DOE facility.

A Tiger Team assessment at the INEL took place from June 17, 1991, to August 2, 1991. The INEL assessment identified 1,492 findings and concerns with a breakdown into 101 environmental findings, 619 safety and health concerns, 24 management and organization findings, 684 Occupational Safety and Health Administration findings, and 17 self-assessment findings. Five general categories of root causes were identified by the Tiger Team: vision and leadership; policy and procedures; organization roles, responsibilities, and interfaces; staffing and training; and management systems.

Corrective Action Plans were developed to address Tiger Team findings. Organizational environment, safety, and health responsibilities will be better defined and clarified within the DOE field office and contractor organizations. Analyses of current and future staffing needs will also be performed. Lastly, individual corrective action plans will correct specific deficiencies noted in equipment and methods of operation. Funding to address Tiger Team findings is provided in the appropriate Activity Data Sheet.

Corrective Action Plans are intended to be fully responsive to the Tiger Team assessment. The strategy pursued in preparing the action plans focused on understanding and correcting the key findings and fundamental root causes that led to the deficiencies identified.

CHAPTER 2

OVERVIEW OF WASTE ISSUES

OVERVIEW OF WASTE ISSUES

INTRODUCTION

Several different types of hazardous wastes have been produced, stored, and disposed of at the INEL during its four decades of operation. While most waste treatment and disposal practices used at the INEL have been effective, some practices have led to the release of contaminants to the environment.

Under the Consent Order and Compliance Agreement (COCA) process, suspected waste disposal units were identified for investigation as specified by the Resource Conservation and Recovery Act (RCRA). The identification of releases of contamination to the environment resulted in the INEL being placed on the National Priorities List of Superfund sites. Three areas of confirmed releases of contamination to the environment are:

1. The Radioactive Waste Management Complex (RWMC), where small amounts of volatile organic compounds (VOCs) have been measured in the groundwater and small amounts of VOCs and trace concentrations of transuranic radionuclides were detected at a depth of 240 feet. Both contaminants are suspected to be traceable to the buried waste.

2. The Test Reactor Area (TRA), where chromium compounds have been detected beneath a waste-water pond in groundwater that is perched above the Snake River Plain Aquifer (perched water).

3. The Test Area North (TAN) groundwater, where volatile organic compounds were measured in wells that supply drinking water for the TAN.

Investigations of these sites continue on a priority schedule; those sites with the greatest potential for contamination are being investigated first. Initial investigations indicate that no immediate threats to public health or to the environment are known to exist because of past or present waste activities at the INEL. However, many sites at the INEL will be remediated to ensure that potential threats to public health and to the environment are addressed.

The purpose of remediation is to ensure that the risk from a release of a hazardous substance to the environment has been reduced to the appropriate level. Remedial action will be necessary at the INEL and is being accomplished through the Federal Facility Agreement and Consent Order (FFA/CO) with the state of Idaho and Region 10 of the EPA. The FFA/CO identifies sites scheduled for investigation and sets deadlines for meeting those schedules. The agreement also allows DOE-ID to identify and investigate new areas suspected of being contaminated. The sites include spills, abandoned tanks, septic systems, percolation ponds, injection wells, french drains, rubble piles, contaminated soils, leach fields, and landfills.

Contaminants potentially released at those sites include petroleum products, acids, bases, volatile organic compounds, heavy metals, radionuclides, polychlorinated biphenyls (PCBs), and asbestos. Subsurface movement of transuranic radionuclides

and volatile organic compounds from the buried waste at the RWMC is of particular concern.

To avoid contamination from wastes produced by current INEL operations, wastes must be handled, treated, stored, and disposed of in an appropriate manner. Waste management (WM) operations at the INEL are conducted to ensure these activities are in compliance with applicable laws. Activities identified at the INEL to improve WM include:

- Waste minimization, stabilization, and volume reduction to reduce quantities and hazard levels of waste for disposal;
- Waste treatment, storage, and disposal;
- Minimization of worker exposure to hazardous chemicals and radioactivity; and
- Upgrades of WM facilities.

POTENTIAL FOR THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

No immediate risk to the public, the workers, or the environment is currently known to exist at the INEL. The majority of the waste units that were deemed most likely to have been contaminated have been initially investigated; many of the units were found not to have contamination or to have contamination below the threshold requiring action; others have or will require further investigation and are included in the FFA/CO.

Once a contaminated site is identified, measures are taken to ensure the area is contained so that no harm will come to the public or to workers at the INEL, and releases to the environment are minimized. Actions to remediate these areas are based on potential risks posed by the contamination.

As shown in Figure 2-1, for environmental contamination to pose a risk, there must be a combination of a number of elements that, taken together, result in an exposure or potential exposure that could have a health effect. The first element is the existence of a waste source. A

source, however, poses no risk if there is no pathway (such as air dispersion or groundwater) for contamination to reach the environment or human populations. Once contamination has found a

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Figure 2-1. Contamination and Human Exposure.

pathway, there must be human or biological exposure to the contaminant through the pathway. At this point, the risk to people or to the environment can be calculated based on the toxicity of the substance and the theoretical amount of exposure through the pathway. If, based on this type of assessment, a site is found to pose

risks beyond the acceptable range, actions are taken to reduce the risks.

DOE-ID's objectives are to ensure that all areas of contamination are identified and contained so further contamination will not occur and the safety of workers and the public can be maintained. DOE-ID is also committed to following stricter operational and environmental guidelines to ensure present practices do not result in additional contamination. These two objectives are addressed through two programs: (1) the Environmental Restoration (ER) program is designed to address potential release sites that resulted from past operations and (2) WM operations that ensure that current and future WM practices prevent any additional impact on the environment.

DOE-ID acknowledges that there are areas of significant contamination at the INEL. If left unaddressed, these areas could pose a threat to human health and affect the surrounding environment. Correcting the situation that caused the environmental problem (eliminating the source) is the first step; assessing the extent of contamination is the second; identifying clean-up goals and levels is the third; finally, the contamination must be stabilized in place or removed for treatment and disposal in accordance with applicable laws. This process is both time-consuming and expensive, but it is crucial that problems being addressed are clearly identified and understood prior to initiating any clean-up activities to ensure that clean-up actions reduce the risk by appropriately breaking the chain of source, pathway, and exposure.

Change from the Draft SSP

Because of public concerns regarding the threat of earthquake damage to facilities at the INEL and possible ensuing threats to human health and the environment, DOE-ID has added the following section detailing the potential for danger and the safety precautions in place at INEL facilities.

Seismic Concerns

Seismic safety concerns are a factor when considering the geologic reliability of the INEL as a

storage site for different types of waste either being generated on-site or stored awaiting disposal. Both local earthquake monitoring by the INEL and the historical earthquake record indicate that the eastern Snake River Plain is aseismic relative to the surrounding seismically active regions. The INEL facilities, including buildings and structures related to waste storage, have safety measures built into their design to minimize potential risk to human health and the environment from seismic events. All the INEL reactors have automatic shutdown procedures linked to seismic monitors that prevent releases in the event of an earthquake. Recently, a deterministic (worst-case scenario) site-specific ground motion study was completed for all the INEL facilities and currently, a probabilistic seismic hazards investigation is underway to update seismic design criteria for all new and existing INEL facilities.

The geology of the site and safety of the Snake River Plain aquifer require significant attention with regard to ER and WM concerns (see Chapters 5 and 6). DOE stated in its 1980 Record of Decision on the Waste Isolation Pilot Plant (WIPP) that "There are no suitable geologic environments for the disposal of the [transuranic] waste permanently on the INEL site" (46 FR 9163.C). This statement is correct with respect to the permanent disposal of long-lived transuranic waste (greater than 100 nanocuries per gram transuranic content); the porous nature of the basalt flows would provide for a very poor geologic repository for the disposal of these types of long-lived wastes. The statement, however, does not apply to the storage of wastes being generated or held at the INEL in steel casks or boxes on asphalt pads or in buildings specifically designed for the storage of waste. While site geology is not suitable for the disposal of long-lived waste like transuranic waste, it is suitable for low-level waste disposal. Low-level waste primarily consists of radionuclides that decay to background levels in a relatively short period of time.

PUBLIC INVOLVEMENT

To carry out DOE's policy of openness with the public, DOE-ID is providing the public with opportunities to get involved in planning and

decision-making activities related to ER and WM. The purpose of providing these opportunities is twofold: it provides information to help the public understand why DOE-ID is conducting ER and WM programs, and it provides opportunities for individuals and organizations to become involved in the decision-making process by providing comments on DOE-ID plans and activities. By pursuing these two purposes DOE-ID and the public can enjoy the benefits of having informed consent on DOE-ID's ER and WM activities.

Potential impacts of ER and WM activities are of interest to a broad range of people. The SSP serves as the vehicle for public comment concerning DOE-ID planning on these issues. Chapter 3, "Public Involvement," outlines four major topics: (1) how DOE-ID has included the public in the development of the SSP; (2) how DOE-ID plans to keep communities informed and involved with its cleanup and WM efforts; (3) how regulatory requirements affect public involvement; and (4) what opportunities individuals and organizations have to make comments on ER and WM decisions.

CORRECTIVE ACTIVITIES¹

Corrective activities are those activities needed to bring facilities that are currently out of compliance with applicable local, state, federal, and internal DOE requirements into compliance as quickly as possible. As discussed in Chapter 4, "Corrective Activities and Transition Activities," the only corrective activities currently being undertaken at the INEL are at the Idaho Chemical Processing Plant and the Argonne National Laboratory-West. Other corrective activities at the INEL identified in previous SSPs have been completed.

1. Activity Data Sheets CH-1603 and ID-1009-WN.

ENVIRONMENTAL RESTORATION

ER refers to the assessment and cleanup of potential release sites at facilities at the INEL. This may need to occur at sites that are no longer a part of active operations or where a release or threatened release of hazardous substances poses a threat to human health and the environment. Through much of the INEL's operating history, various amounts and types of waste have been released to the environment and require cleanup or other action. In addition, many inactive facilities contain some contamination that must be removed before these facilities can be demolished or reused. These problems are being addressed by DOE-ID through its ER program.

Chapter 5, "Environmental Restoration," describes two fundamental sets of activities being undertaken by the ER Program: (1) remedial investigations and actions to identify and, where necessary, cleanup potential releases from inactive waste sites; and (2) decontamination and decommissioning of surplus facilities. Remedial actions are primarily focused on the assessment and cleanup of inactive potential release sites. Objectives related to remedial actions include:

- identifying inactive, contaminated facilities and sites at the INEL;
- assessing the nature and extent of contamination at these facilities;
- confining and containing existing contamination to the extent necessary to minimize further spread;
- providing for negotiated agreements with regulatory authorities defining requirements and schedule for the cleanup of facilities and sites;
- ensuring that cleanup is carried out in strict compliance with agreements and applicable environmental laws; and
- providing long-term monitoring to ensure continuing compliance.

The regulatory requirements for remedial action activities are prescribed primarily by the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Resource Conservation and Recovery Act (RCRA); the National Environmental Policy Act (NEPA);

and, with respect to radioactive substances, the Atomic Energy Act and various DOE Orders. Certain state and local requirements, such as the Idaho Hazardous Waste Management Act, are also applicable.

DOE-ID remedial actions are conducted within the framework of the FFA/CO, which coordinates overlap between CERCLA and RCRA and sets schedules and enforceable deadlines for meeting cleanup obligations committed to in the agreement. The FFA/CO also divides the site into 10 Waste Area Groups associated with INEL facilities. Waste Area Groups are further divided into individual Operable Units, which represent the smallest grouping of potential release sites from the standpoint of decision making. These groupings make the job of conducting cleanup investigations and reaching cleanup decisions more manageable.

Decontamination and decommissioning activities are primarily concerned with the safe caretaking of surplus nuclear facilities until either decontamination or complete removal occurs. Decontamination and decommissioning includes tasks connected with assessment and characterization, engineering, and decontamination and decommissioning operations. Decontamination and decommissioning has already been completed at 25 facilities and is being performed at four other facilities. In addition, surveillance and maintenance activities are in progress for all the INEL inactive/surplus facilities where decontamination and decommissioning has not yet begun.

WASTE MANAGEMENT

WM activities are those concerned with minimization, treatment, storage, and disposal of all nonhazardous, hazardous, radioactive, and mixed wastes generated as a result of operations at active facilities or from other major sources, such as the ER program.

WM operations at the INEL can best be understood by considering the “waste stream.” Chapter 6, “Waste Management,” includes a description of the operating INEL facilities and programs that generate waste and DOE-ID efforts to eliminate or minimize waste generation. Each waste stream is

then discussed individually from the standpoint of how that waste stream is treated, stored, and disposed of. Chapter 6 concludes by discussing the WM programs on continuity of operations and environmental monitoring.

LANDLORD

The Landlord Program, which is described in Chapter 7, is responsible for the support of specific facilities that provide general consumer-use services to INEL programs. Primarily, the landlord is involved with the construction of upgrades of physical infrastructure supports such as fire protection systems, electrical upgrades, and the transportation complex. Landlord operations provide common support services to all programs and facilities. ER and WM programs take ownership of these landlord functions.

The objectives of landlord efforts are to:

- Emphasize regulatory compliance (e.g., environment, safety, and health; Occupational Safety and Health Administration; NEPA) in landlord facilities;
- Enhance site and facility planning processes;
- Provide comprehensive, integrated facility-management services;
- Continue emphasis on maintaining and preserving existing assets;
- Reduce maintenance and equipment backlogs; and
- Continue sitewide infrastructure support.

TECHNOLOGY DEVELOPMENT

To support the goal for cleanup of its sites by the year 2019 and to reduce program costs, DOE has established an aggressive applied research, development, demonstration, testing, and evaluation program. The Technology Development Program (see Chapter 8) is responsible for developing new technologies or refining existing technology in order to provide the needed support in several areas of ER and WM. At the INEL, for example, new technologies are needed to deal with remediation of the buried waste at the RWMC, to find innovative means for waste minimization, and to develop new treatment processes for dealing with certain waste streams.

ENVIRONMENTAL IMPACT ASSESSMENT

NEPA requires all federal agencies to assess potential environmental impacts of proposed major actions that may significantly affect the quality of the human environment. To comply with NEPA, DOE-ID intends to prepare the appropriate environmental documents assessing environmental impacts for all proposed facilities and programs at the INEL, including projects for the storage, transportation, treatment, or disposal of waste at the INEL. These NEPA documents will support DOE-ID's decision-making process to determine how or if the proposed projects will be implemented. For projects that are routine in nature and known to not have significant environmental impact, DOE-ID will prepare what is referred to as a Categorical Exclusion in accordance with the April 24, 1992, DOE NEPA Final Rule. If it is unclear whether or not the environmental impact of a proposed project is significant, DOE-ID may do an Environmental Assessment or an Environmental Impact Statement. DOE-ID may choose to prepare an Environmental Impact Statement without an Environmental Assessment when there is a presumption of potential significant impact. For ER actions, NEPA will be integrated into the CERCLA process and documents. These activities are discussed in Chapter 9. A list of the anticipated NEPA documentation for each Activity Data Sheet is included as Appendix E.

QUALITY ASSURANCE

DOE-ID is committed to managing INEL operations in a manner that protects the health and safety of workers and the public and that ensures that all work meets the highest standards of quality and efficiency. As described in Chapter 10, the quality assurance program at the INEL is a management system that establishes procedural requirements for planning and performance of tasks so that acceptable products, technical services, and data are consistently achieved. These requirements ensure that all ER and WM product designs and services meet acceptable quality standards and that any deviations from these standards are detected. When problems are detected, the causes of such deviations are

identified, corrected, and documented. The program is designed to ensure that facilities and equipment designed, procured, or produced at the INEL will be safe, reliable, and cost-effective. The Quality Assurance Program complies with DOE Orders and other regulations for quality assurance programs at nuclear facilities.

FUNDING AND GENERAL ASSUMPTIONS

The level of funding available hinges on the congressional budgetary process. However, both ER and WM are dynamic in nature, and new findings can change the funding requirements and allocations making accurate assessment of future needs difficult. Likewise, Congress has the final word on how much funding is allocated to DOE. Therefore, projected funding levels for ER and WM operations are estimates. Short-term budget requirements are relatively well understood; however, long-term budget requirements (i.e., four to five years in the future) are more speculative because cleanup requirements will not be defined until later in the process. Furthermore, new developments that emerge during the site investigation phases of the ER program will require budget restructuring. A breakdown of the funding information shown in Table 2-1 is provided in Appendix A.

Dollars in Thousands		
Program	FY 1992	FY 1993
Corrective Activities	7,529	247
Transition Activities	0	31,300
Environmental Restoration	63,256	90,703
Waste Management	191,198	287,538
Landlord Activities	33,410	45,069

Table 2-1. Estimate of Federal Funding for the INEL ER and WM Programs.

STATUS OF PREVIOUS COMMITMENTS

In the FY-1992 SSP, DOE-ID made commitments concerning the SSP process and addressing ER

and WM problems at the INEL. These commitments and their current status are listed below. Commitments from last year's SSP that were completed have been dropped.

Change from the Draft SSP

Funding in the SSP is provided for FYs 1992 and 1993 only. Outyear funding requirements have not been approved by the Office of Management and Budget and have not been authorized for dissemination in the SSP.

Commitments Relating to the Site-Specific Plan

Commitment: DOE-ID will inform the public, special interest groups, and regulators about the SSP and its updates; provide an opportunity for the public to participate in the SSP; ensure that DOE-ID and the INEL contractors are informed regarding public concerns and interests; and ensure that these issues will be reflected in all subsequent SSPs.

Status: DOE-ID's efforts to encourage public participation in the SSP are described in Chapter 3, "Public Involvement." DOE-ID's responses to comments on the previous SSP were prepared as a separate document entitled *Response to Comments on the FY-92 SSP*. This year, input on the Draft FY-1993 SSP has been incorporated in this final SSP as Appendix F.

Commitment: DOE-ID will continue to seek the input of interested parties in each revision of the SSP.

Status: Public involvement and input to the SSP remains the key objective of the plan. This is evidenced by the public involvement activities related to the SSP and changes made to the SSP in response to the public's comments.

Commitment: A comment/response document will be provided in mid-November showing all public comments received during the public comment period and DOE's responses to those comments.

Status: The *Response to Comments on the FY-92 SSP* document was prepared and issued to the public in March 1992. The comment/response

documentation from the Draft FY 1993 SSP is included as Appendix F in this final SSP.

Commitments Relating to ER and WM

Commitment: The agreement with the governor of Idaho concerning the moratorium on the receipt of additional transuranic waste at the INEL will stand.

Status: The INEL is honoring the governor's moratorium and does not intend to deviate from that position until that moratorium is lifted.

Commitment: No transuranic waste disposal will occur at the INEL.

Status: No transuranic waste disposal activities take place at the INEL. All transuranic waste at the INEL is either stored at the RWMC or at ANL-W or was buried at the RWMC prior to regulations requiring special disposal. The small volume of transuranic waste generated by INEL operations is temporarily stored at the RWMC pending permanent disposal at the Waste Isolation Pilot Plant.

Commitment: DOE-ID will make every effort to prevent waste of any type from accumulating at treatment or storage facilities without treatment and disposal options clearly identified.

Status: WM is in the process of converting its management focus toward a waste stream emphasis allowing cradle-to-grave management of all wastes generated. This management focus will stipulate that ultimate disposition of any waste be identified prior to its generation.

Commitment: The volume of nonhazardous waste will be reduced in the next five years by 50 percent via an aggressive recycling program.

Status: The Waste Minimization Program is involved in an aggressive recycling program. To date, all Idaho Falls facilities recycle paper products. The site has yet to realize a full recycling program although wood and metal disposed of at the INEL landfill are recycled. Recycling is being evaluated for economic efficiencies because of radiological concerns regarding site recyclables. A baselining effort is also underway that will enable status to be projected on the 50-percent reduction goal. This baseline should be complete during FY 1993.

Commitment: A trial burn of the Waste Experimental Reduction Facility incinerator will be performed in FY 1992.

Status: The Waste Experimental Reduction Facility has been shut down to upgrade safety documentation and operational procedures. The Waste Experimental Reduction Facility restart is scheduled for the third quarter of FY 1993.

Commitment: DOE-ID will develop and submit mixed waste inventory reports, a treatment capacity compliance plan, and progress reports required by the Federal Facilities Compliance Act.

Status: DOE-ID is currently determining the information existing and needed to be obtained to prepare the reports in the required timeframe.

Other Commitments

Commitment: The INEL ER and WM Environmental Impact Statement will be completed as soon as possible (1993) following the completion of the Environmental Resource Document.

Status: The current focus is to prepare a broad ER and WM Environmental Impact Statement for the INEL facilities from which subsequent NEPA documents can be tiered. The proposed schedule lists the Record of Decision on the Environmental Impact Statement in FY 1996.

Commitment: The original "463" Agreement made with the governor of Idaho in December 1988 will be expanded beyond \$463 million for cleanup activities at the INEL over a six-year period (1989-1994).

Status: The "463" Agreement has been replaced by the commitments made in the FFA/CO. The FFA/CO commitments regarding funding expenditures are much more aggressive.

Commitment: All identified corrective activities are to be completed before the end of FY 1995.

Status: DOE-HQ has defined corrective activities as short-term deficiencies that require immediate action. Deficiencies that are longer term or extend beyond two years can be funded within the appropriate WM or ER budget through the normal budget cycle. Therefore, all corrective activities will be completed by FY 1994, with items that extend

beyond this timeframe transferring to either ER or WM as appropriate.

Commitment: A Public Participation Plan detailing the opportunities for the public to provide input into cleanup and WM decisions will be prepared.

Status: A Public Participation Plan is outlined in Chapter 3, "Public Involvement." This plan, once completed, will coordinate all public involvement activities for all programs under ER and WM jurisdiction.

Commitment: Funding appropriation for ER and WM will be provided when available. If this information is available early enough, it will be provided in the comment/response document.

Status: Funding appropriations for FY 1992 were not received until after the *Response to Comments on the FY-92 SSP* was issued. However, this information is included in the INEL Institutional Plan, which is available upon request.

NEW COMMITMENTS

The following commitments were made in the *Response to Comments on the FY-92 SSP* or in the *Draft FY-1993 SSP*:

Commitment: More specific project details will be provided in the revision of the SSP while still providing readers with a broad perspective of cleanup efforts and directions.

Status: Specific discussion of each Operable Unit is included in this version of the SSP to provide the detail requested.

Commitment: The revision of the SSP will provide greater information concerning spent fuel, high-level mixed waste, and issues relating to the ICPP.

Status: Chapter 6, "Waste Management," discusses spent fuel and high-level mixed waste separately and in greater detail. Chapter 4 now includes a discussion of Transition Activities and how these issues will affect the transition of the ICPP's mission.

Assumption

All commitments and signed agreements will be tracked, documented, and brought to closure.

CHAPTER 3

PUBLIC INVOLVEMENT

PUBLIC INVOLVEMENT

Assumption

DOE will continue to provide opportunities for the public, tribal groups, and state and local governments to contribute to the INEL's ER and WM planning.

INTRODUCTION

Because activities at the INEL have affected or have the potential to affect the environment, the issues surrounding these activities are of interest to a broad range of people. Former Secretary of Energy James Watkins was responsible for DOE's effort to have open and clear communications with the public. The preparation of both DOE-HQ's ER and WM Five-Year Plan and the SSPs for field installations are the result of this initiative.

This chapter describes DOE-ID's program for informing and involving the public in DOE-ID's ER and WM programs, including the public's involvement in five-year planning activities such as roadmapping. The primary objectives for public involvement in DOE's planning processes are:

- To inform public officials, Indian Tribes, interest groups, businesses, and individuals about current plans for ER and WM activities at the INEL;
- To ensure that public concerns and interests relating to ER and WM are reflected in the SSP and in DOE's planning;
- To provide flexibility so that DOE's plans and the SSP can be modified in response to changing concerns within the community; and

- To ensure that DOE-ID and INEL contractors are given feedback regarding public interest in, and concerns about, the DOE's plans.

To carry these objectives beyond the SSP, DOE-ID is preparing a Public Participation Plan that details various opportunities for the public to become involved in cleanup and WM decisions. Some opportunities are provided as part of the public's review of the INEL SSP, which is largely the result of DOE's own initiative. Other opportunities are provided through the requirements of various environmental laws to which the INEL is subject. The following sections describe both voluntary and required public involvement activities that will be incorporated into the Public Participation Plan. Decision-making related to the Federal Facility Agreement and Consent Order (FFA/CO) is discussed in the section on the Community Relations Plan. First, however, a description of the activities undertaken by DOE-ID to involve the public in the INEL SSP planning process is provided.

PUBLIC INVOLVEMENT IN THE SITE-SPECIFIC PLAN

This year, DOE-ID took a unique approach to developing its SSP by releasing it in draft form for public input (see Figure 3-1). Five workshops were held at locations around the state to receive public input on the draft plan. Oral and written input has been summarized and responded to in Appendix F. As a result of public input, this final SSP has undergone significant revisions and enhancements. The result is a much higher quality document than would have been possible without public review.

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Figure 3-1. Public involvement in the Development of the SSP.

FIVE-YEAR PLAN WORKING GROUP

Since the concept of a Five-Year Plan Working Group was first proposed, the INEL has been designated by DOE-HQ as a test site for implementing the anticipated recommendations of the Federal Facility Environmental Restoration Dialogue Committee (the "Keystone Dialogue Committee"). The Committee, which is sponsored by the EPA, consists of representatives of numerous federal and state agencies, Indian Nations, and national and local environmental, labor, and citizen organizations. Its goal is to develop policy recommendations aimed at improving the process by which federal facility ER decisions are made so that these decisions reflect the priorities and concerns of all stakeholders. The Committee's recommendations will probably include (1) the use of Site-Specific Advisory Boards

at federal facilities to advise the regulated and regulating agencies on ER decisions at the site and (2) a specific approach for the development of advisory boards at facilities that currently lack such groups. When the Committee's recommendations are finalized, DOE-ID will share the report with the public.

Members of the public and the state of Idaho have indicated their support for the creation of an advisory group, although their support was tempered by concerns about the process for selecting the group's membership and concerns about the group's authority and autonomy. Therefore, DOE-ID is re-examining its original proposal and the models provided by commentors, other DOE facilities, and the Keystone Dialogue Committee and anticipates modifying the Working Group to a Site-Specific Advisory Board. DOE-ID will continue development of this concept in an open public forum. Consensus on the final model will be sought from interested and affected agencies, individuals, and organizations. To ensure the ultimate success of the advisory group it is imperative that the concept be thoroughly examined by representative stakeholders and that the stakeholders' input be used to create an acceptable approach agreeable to all parties.

PUBLIC PARTICIPATION PLAN

To carry out DOE's policy of openness with the public, DOE-ID is developing a Public Participation Plan. The Plan focuses on public involvement in a broad range of activities related to ER and WM operations, including coordination with the INEL's Community Relations Plan (discussed below).

The Public Participation Plan will (1) provide information to help the public understand why DOE-ID is conducting ER and WM programs and (2) provide opportunities for individuals and organizations to express their concerns and views about past, present, and projected activities at the INEL. Together, these two steps are designed to place DOE-ID in a position to learn how its operations are perceived in neighboring communities and throughout the region.

Through the Public Participation Plan, DOE-ID intends to design public-participation opportunities that go beyond the letter of the law and the traditional meeting format to communicate with

the greatest number of citizens. While some of these activities are required by various environmental laws, DOE-ID is committed to informing the public about and involving the public in its decisions. It is important that information is in the form requested by the public.

COMMUNITY RELATIONS PLAN

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a Community Relations Plan must be developed to involve surrounding communities in decisions concerning cleanup. DOE-ID's ER Program is subject to this requirement. The narrow scope of the Community Relations Plan focuses on the cleanup of hazardous substances that have been released to the environment at the INEL. (In contrast, the SSP focuses on the cleanup of inactive sites and WM strategies for active operations.) DOE-ID conducted community interviews and prepared a Community Relations Plan which will be updated annually.

Through interviews with individuals, groups, and organizations, the community's concerns regarding DOE-ID's environmental investigation and cleanup program have been identified. Those interviewed were also asked to identify potential methods of communication between DOE-ID and the public.

Copies of the Community Relations Plan can be found in the INEL Information Repositories listed below. Copies are also available from the INEL Community Relations Plan Coordinator, Reuel Smith, at (208) 526-6864.

Information Repositories. Information Repositories provide public access to copies of the SSP, the Five-Year Plan, and associated documents, such as transcripts of public meetings and DOE-ID's responses to public comments. The repositories also contain a variety of other

documents prepared in conjunction with regulatory requirements for the ER Program, including work plans and reports and documentation for environmental cleanup activities for which there have been public comment periods. The repositories allow the public greater access to details on ER activities at the INEL.

The addresses, phone numbers, and hours of operation of these repositories (at the time this document was prepared) are listed in Table 3-1. Because hours of operation change seasonally, DOE-ID suggests calling the repositories before visiting them.

In addition to established Information Repositories, information to be reviewed by the public during comment periods will be sent to local libraries. This practice will increase access to documents in outlying areas. Libraries that wish to receive copies of Information Repository or Administrative Record files may contact the Idaho State Library in Boise and ask about their interlibrary loan program (see Table 3-1 for address and phone number). At the public's request, additional libraries can be added. The following libraries are among those to receive documents or materials:

Locations in Idaho:

American Falls	Nampa
Lewiston	Gooding
Blackfoot	Buhl
Hailey	Rexburg
Burley	Jerome
Rupert	Caldwell
Ketchum	Shoshone
Arco	

Other Locations:

Jackson, WY

Name	Telephone	Address	Hours
NEL Technical Library	(208) 526-1185	1776 Science Center Drive Idaho Falls, ID 83415	8:00 a.m. - 7:00 p.m. Monday - Thursday 8:00 a.m. - 5:00 p.m. Friday 9:00 a.m. - 1:00 p.m. Saturday
Idaho Falls Public Library	(208) 529-1450	457 Broadway Idaho Falls, ID 83402	9:00 a.m. - 9:00 p.m. Monday - Thursday 9:00 a.m. - 5:30 p.m. Friday, Saturday
Twin Falls Public Library	(208) 733-2964	434 2nd Street East Twin Falls, ID 83301	10:00 a.m. - 6:00 p.m. Monday, Friday 10:00 a.m. - 9:00 p.m. Tuesday, Wednesday, Thursday 12:00 p.m. - 5:00 p.m. Saturday
Pocatello Public Library	(208) 232-1263	812 East Clark Pocatello, ID 83201	10:00 a.m. - 9:00 p.m. Monday - Thursday 10:00 a.m. - 6:00 p.m. Friday, Saturday
Boise Public Library	(208) 384-4076	715 South Capitol Boulevard Boise, ID 83706	10:00 a.m. - 6:00 p.m. Monday, Friday 10:00 a.m. - 9:00 p.m. Tuesday, Wednesday, Thursday 1:00 p.m. - 5:00 p.m. Saturday
Idaho State Library	(208) 334-2152 1-800-533-6923	325 W. State Boise, ID 83702	9:00 a.m. - 5:00 p.m. Monday - Friday
University of Idaho Library	(208) 885-6344	Government Documents Department Rayburn Street Moscow, ID 83843	7:30 a.m. - 10:00 p.m. Monday - Thursday 7:30 a.m. - 5:00 p.m. Friday 1:00 p.m. - 5:00 p.m. Saturday
Shoshone-Bannock Library	(208) 238-3882	HRDC Building Bannock and Pima Streets Fort Hall, ID 83203	Call for hours

Table 3-1. Information Repository Locations, Days, and Hours.

INEL OUTREACH OFFICES

INEL Outreach Offices are located in Pocatello, Twin Falls, and Boise to respond to request for information in those areas. Outreach Office directors give presentations and briefings to schools, civic organizations, environmental groups, and others concerning INEL activities. They can also respond to requests for INEL tours, mailing list additions, and will provide the level of public involvement needed in their particular area for various INEL topics.

Listed below are the names of INEL Outreach Office directors and the locations of the Outreach Offices.

Lane Allgood, Director (208) 233-4731
INEL Pocatello Office
1651 Al Ricken Dr.
Pocatello, ID 83201

Linda Baird, Director (208) 734-0463
INEL Twin Falls Office
233 2nd Street North, Suite B
Twin Falls, ID 83301

Rick Tremblay, Director (208) 334-9572
INEL Boise Office
816 West Bannock, Suite 306
Boise, ID 83702

REGULATORY REQUIREMENTS FOR PUBLIC INVOLVEMENT

The primary federal regulations driving ER and WM are CERCLA, the Resource Conservation and Recovery Act (RCRA), and the National Environmental Policy Act (NEPA). All contain public participation requirements that include the creation of public participation plans (referred to as a Community Relations Plan in CERCLA), operation of information repositories, publication of public notices and fact sheets, and holding public comment periods. In addition, DOE requires public participation in SSPs at each site and in its Five-Year Plan at the national level.

CERCLA Requirements

Community Relations Plan. After community interviews are conducted with residents, local officials, and other interested parties, a community relations plan is written based on the needs expressed in the interviews. The community relations plan is reviewed several times during the CERCLA process, and further community interviews may be conducted.

Spokesperson. A designated spokesperson provides information to the community and the media to explain actions and answer questions.

Public Meetings. An opportunity for a public meeting is required during the CERCLA process to present explanations of activities and provide opportunities for interested persons to ask questions and receive answers. Transcripts of meetings held during the public comment period must be made available to the public.

Public Notices. A public notice must be issued to announce the availability of the Proposed Plan and of the Record of Decision in the Administrative Record. The public notice for the Record of Decision must explain the selected remedial action and describe the reasons for any significant changes from the Proposed Plan.

Fact Sheets. After the completion of the final engineering design, a fact sheet will be issued that explains the design of the remedy.

Comment Periods. A minimum 30-day public comment period (which, upon request, can be extended by 30 days) must be conducted on remedial actions and to enable the public to review the Proposed Plan. Public comment periods allow the public to make written and/or oral comments. Upon receipt of an extension request, DOE will consult with the EPA and the state before extending the comment period.

Information Repository. An information repository must be established near the site so that information pertaining to the CERCLA program is readily available to all interested parties. An information repository contains site information, documents on site activities, and general information about the CERCLA process. The purpose is to provide convenient access to site-related documents.

Administrative Record. An administrative record must be established at or near the site, and a copy must be made available to the public. The administrative record contains the documents that form the basis for selection of a response action and serves two purposes: (1) judicial review of any issue concerning the adequacy of a response selection is limited to the record and (2) it is a vehicle for public participation in the selection of the response action. The record should be established within 60 days of beginning site activities. It may be located in the Information Repository.

Response to Comments. A written response, called a responsiveness summary, will be prepared after any comment period. A responsiveness summary must be attached to the Record of Decision.

Technical Assistance Grants. The community must be informed of the availability of the Technical Assistance Grant program, and this information must be made available in the information repository(s).

New Information After Proposed Plan. The final remedial action plan, or Record of Decision, must document any significant changes to the selected remedy based on new information that became known following publication of the Proposed Plan. Certain situations may require additional public comment on the changes.

Explanation of Significant Differences. If the remedial action to be taken differs significantly from the remedy selected in the Record of Decision but does not fundamentally alter the remedy with respect to cost, scope, or performance, DOE will publish an Explanation of Significant Differences. DOE will publish a notice summarizing the Explanation of Significant Differences in a major local newspaper of general circulation and make this information available in the administrative record. If the Remedial Action to be taken fundamentally alters the remedy selected in the Record of Decision, DOE will propose an amendment to the Record of Decision, with appropriate community relations activities.

RCRA Permitting Requirements

Community Relations Plan. A Public Involvement Plan is recommended and should be prepared based on interviews with potentially affected residents, local officials, and other interested parties. The Public Involvement Plan should be revised to address any changes in the level of concern or information needs of the community during the design and construction activities.

Spokesperson. Not required.

Public Meetings. A public meeting may be required for some RCRA permit modification applications. The public meeting will be conducted by DOE and is held no fewer than 15 days after the start of the comment period and no fewer than 15 days before it ends.

Public Notices. For RCRA permit applications, a notice must be sent to the permitting agency's mailing list. For RCRA permit modification applications that address improvements in technology and management techniques, a notice must be placed in a major local newspaper. This newspaper notice marks the beginning of a 60-day public comment period and announces the date, time, and location of an informal public meeting.

Comment Periods. For RCRA permit modification applications that address improvements in technology and management techniques, a 60-day public comment period is required. The comments are to be sent to the

permitting agency. For RCRA permit modification applications that are major changes to a facility or its operations, the permitting agency must prepare a draft permit, allow 45 days for public comment, hold a public hearing if requested, and then issue or deny the permit modification request.

Public Hearings. Citizens may request a hearing on a draft permit or modification.

NEPA Requirements

Public Notices. After an Environmental Assessment is completed and if a Finding of No Significant Impact is prepared, DOE must notify the public of the availability of these documents.

A formal Notice of Intent to prepare an Environmental Impact Statement must be published in the *Federal Register* to initiate the Environmental Impact Statement process and announce the public comment period on the scope of the Environmental Impact Statement and details of any public scoping meeting(s). The notice of the scoping meeting(s) must be published at least 15 days before a meeting is held.

A public Notice of Intent must be published by the Environmental Protection Agency in the *Federal Register* that announces the availability of the draft Environmental Impact Statement.

A public notice also is issued when the final Environmental Impact Statement is prepared. Thirty days later, the Record of Decision can be issued as a notice.

Comment Period.

A minimum 30-day public comment period is conducted to enable the public to comment and offer suggestions on the scope of a proposed Environmental Impact Statement.

A minimum 45-day comment period is conducted to enable the public to comment on a Draft Environmental Impact Statement.

Public Hearings. A public hearing(s) is held to receive comments from the public on the announced scope of the Environmental Impact Statement project, called a scoping hearing, and for comments on the Draft Environmental Impact Statement.

Response to Comments. A response to comments on the Draft Environmental Impact Statement must be prepared and included in the final Environmental Impact Statement. It must provide DOE's responses to comments received during the public comment period on the Draft Environmental Impact Statement and during the public hearing.

Document Availability. Copies of an Environmental Impact Statement, Environmental Assessment, or Finding of No Significant Impact must be available to the public.

Implementation Plan. The implementation plan for preparing an Environmental Impact Statement is a public document that includes scoping meeting comments.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

A variety of both structured and informal opportunities exist for public participation in INEL activities, including submitting written comments, visiting the site, attending meetings, receiving the *INEL Reporter*, or visiting an Information Repository.

Citizens are encouraged to participate at a level that suits their needs. DOE-ID will provide a variety of opportunities from which to choose, and encourages the public to participate in the activities described in this chapter. Involvement as an individual, or through a group or an organization is a matter of personal choice. DOE-ID will respond to every written comment or question submitted if a return address is provided. Technical experts are also available to make presentations to interested groups.

The following list summarizes ways the public can share with DOE-ID their views, ideas, and suggestions:

- Provide written comments

- Request technical presentations
- Tour the INEL site
- Read brochures and publications
- Respond through written or oral comments during comment periods
- Attend meetings
- Ask questions
- Request information
- Visit information repositories
- Respond to articles in the *INEL Reporter* or to the fact sheets

By conducting the activities identified in this chapter, an active communication link between the public, DOE-ID, and the INEL contractors will be established. Public participation will help ensure that DOE-ID's activities are carried out with greater purpose and benefit to the people of Idaho and the nation. During the process, all parties will be given opportunities to read, listen, speak, and question.

Feedback obtained through public involvement will document for DOE-ID the public's concerns, views, suggestions, and priorities. Information from issues raised by the public will become one of the considerations used to set priorities for cleanup and WM activities. Programs will also be influenced by comments directed toward environmental and health protection, and safety of operations. Public confidence in the technologies being developed to solve site restoration, waste handling and storage, and disposal problems will influence the final decisions. Revisions to community relations and public participation plans will be made on an as-needed basis to reflect changing concerns in the community.

Inquiries concerning the Site-Specific Plan can be directed to:

INEL Site-Specific Plan
DOE Idaho Field Office
P.O. Box 2047
Idaho Falls, ID 83403-2047
Phone: (208) 526-6864

CHAPTER 4

CORRECTIVE ACTIVITIES AND TRANSITION ACTIVITIES

CORRECTIVE ACTIVITIES AND TRANSITION ACTIVITIES

Change from the Draft SSP

The discussion of "Transition Activities," which was Chapter 5 in the Draft SSP, is now included at the end of Chapter 4. Chapter 4 has been retitled "Corrective Activities and Transition Activities." Chapters 6 through 11 have been renumbered accordingly.

INTRODUCTION TO CORRECTIVE ACTIVITIES

Corrective activities are those activities needed to bring facilities that are currently deemed out of compliance with applicable local, state, federal, and internal DOE requirements into compliance more quickly than would be possible through the normal budget cycle, which takes two years. Corrective activities are discrete, focused efforts for enhancing regulatory compliance. This has allowed DOE-ID to make progress toward the goal of addressing these problems. As these problems are addressed, the need for corrective activities is reduced.

Corrective activities at the INEL that were identified in previous plans have largely been completed. These items consisted primarily of site upgrades that pertained to solid waste requirements. There are only three projects identified at the INEL requiring corrective activities. The corrective activities for Resource Conservation and Recovery Act compliance at the Idaho Chemical Processing Plant (ICPP) will be transferred to Waste Management (WM) at the end of FY 1993 and will

be completed by FY 1997. The transfer of the ICPP activity will be made following addition of this activity to the normal funding process for waste management for FY 1993. After FY 1993, future out-of-compliance circumstances will be resolved under the appropriate WM or environmental restoration (ER) program through the normal planning process. At Argonne National Laboratory-West (ANL-W), the Radioactive Scrap and Waste Facility and the active non-regulated underground tank corrective actions will be completed by FY 1994.

Because of this transition, the corrective activities section and the corresponding Activity Data Sheets only contain funding for corrective activities through the end of FY 1993. Currently, Land Disposal Restrictions have halted the construction phase of the ICPP environmental Corrective Activities scheduled for completion in FY 1992. Unless a timely resolution to this issue is achieved, a small carryover of the FY 1992 Activity Data Sheet funding into FY 1993 will be necessary.

IDENTIFYING AND CORRECTING NONCOMPLIANCE

It is DOE-ID's intention to identify and correct all conditions that have brought about noncompliance and to take action to prevent future repetition of those conditions. To accomplish this, it is DOE-ID's policy that the condition, cause, and corrective action be reported to the appropriate management levels, which will then verify that

- Immediate actions are taken to remedy the specific condition;
- Root cause factors are determined;
- Controls are reviewed, implemented, and monitored to ensure corrective action will prevent the condition from recurring; and
- Affected managers at all appropriate levels are notified of the adverse condition and of lessons learned to improve or avoid similar conditions.

DOE-ID is committed to achieving and maintaining compliance with all applicable local, state, federal and DOE requirements. Many of the requirements applicable to the INEL operations (particularly WM and effluents) are stated or referenced in the following regulations, orders, or agreements:

- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Idaho Hazardous Waste Management Act (HWMA)
- DOE Order 5400.1, "Exhaust Monitoring Regulations"
- DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program"
- DOE Order 5400.4, "DOE CERCLA Guidance"
- DOE Order 5480.1B, "Liquid Discharge Regulations"
- DOE Order 5480.2, "Hazardous and Radioactive Mixed Waste Management"
- DOE Order 5820.2A, "Radioactive Waste Management"
- 40 Code of Federal Regulations (CFR) 258, "Municipal Landfill Regulations"
- 40 CFR 260 through 270, "Implementing RCRA Hazardous Waste Requirements"
- 40 CFR 280, "Underground Storage Tank Regulations"
- Idaho Waste Disposal and Injection Well Act
- Underground Injection Control Regulations

All activities that have been designated corrective activity tasks will be accomplished in an expeditious manner consistent with priorities and operating schedules.

More detailed discussion of specific corrective activities can be found in the Activity Data Sheets which will be available at the Information Repositories listed in Chapter 3, "Public Involvement." Funding for corrective activities is summarized in Table 4-1.

The technical approach of identifying, characterizing, and determining appropriate corrective actions; scheduling those actions; conducting the design process through all stages; and performing the activity is the standard process used for all construction projects at the INEL. Only technology that is currently available will be used for these corrective activities to expedite action and achieve compliance. Successful completion of an activity will be determined when DOE-ID and associated regulatory agencies agree that all applicable regulatory requirements and criteria have been met.

CORRECTIVE ACTIVITIES AT THE INEL

ICPP Environmental Corrective Activities¹

Several compliance activities are under way at the ICPP. Primarily these include repairs to underground lines and embedded interior wall penetrations that are not double-contained and carry either radioactive, hazardous, or mixed solutions. These lines may not meet the requirements of 40 CFR 264, Subpart J, which details the secondary containment requirements for tank systems under the regulations for treatment, storage, or disposal facilities. As required, this activity is providing secondary containment, including leak detection and isolation of these lines. Alternate routings of waste solutions inside the process buildings are being accomplished during this task. The work is being accomplished sequentially so various facilities, such as the New Waste Calcining Facility (NWCF), can be operated prior to completing the entire task. Those tasks required to resume operation of the NWCF, and

1. Activity Data Sheet ID-1009-WN.

uranium extraction and purification and other waste-handling facilities have been completed. Other projects to bring the ICPP into full compliance are ongoing.

Radioactive Scrap and Waste Facility Compliance

The Radioactive Scrap and Waste Facility (RSWF) is required to satisfy RCRA regulations for the storage of mixed waste generated at the ANL-W area. The activity discussed here is the upgrade of the RSWF. The purpose of the upgrade is to replace liners and relocate mixed waste cans to cathodically protected liners to provide an acceptable alternative to inspection of mixed waste containers, as described in ANL-W's RCRA Part B submission. The facility is currently unable to comply with 40 CFR 265.174 inspection requirements. This upgrade involves: (1) installation of new, cathodically protected storage liners; (2) relocation of all mixed waste currently in single containment cans by August 1, 1992; and (3) relocation of the remainder of the mixed waste, currently in double containment cans, by November 1, 1993.

Active Regulated Underground Storage Tanks²

ANL-W has two active regulated underground storage tanks requiring release detection installation to be completed in the first quarter of FY 1993. Upon completion of release detection installation, corrective activities for ANL-W underground storage tanks will be completed. Remaining underground storage tanks, which are active nonregulated, will be upgraded under WM activities.

Major Milestones for Corrective Activities at the INEL

- Complete mixed waste container relocation to new liners at the RSWF
1st Quarter FY 1994

2. Activity Data Sheet CH-1603.

Dollars in Thousands

Program	FY 1992	FY 1993
Corrective Activities	7,529	247

Table 4-1. Funding for Corrective Activities.

INTRODUCTION TO TRANSITION ACTIVITIES

The Idaho Chemical Processing Plant's (ICPP's) mission has changed because of the April 29, 1992, announcement of former Energy Secretary Watkins' decision to begin phasing out reprocessing and recovery of highly enriched uranium from spent nuclear fuel at DOE facilities. Plans are being developed for the decontamination and decommissioning of DOE's reprocessing plants. The following discussion presents an overview of the Spent Fuel and Waste Management Technology Development Plan (Spent Fuel Plan) for the ICPP.

DEFINING ICPP'S NEW MISSION

DOE's Office of Environmental Restoration and Waste Management is preparing a comprehensive, department-wide Spent Nuclear Fuel Management Plan that includes development of methods to condition the spent fuel for disposal or other appropriate action. Pending disposal, spent fuel scheduled to be received at the ICPP must be stored with the current inventory prior to preparation for permanent disposal or other appropriate action.

In April 1992 DOE-ID released a Draft Spent Fuel Plan that outlines the plans for management of fuels and wastes at the ICPP. The Draft Spent Fuel Plan describes ICPP's new mission, which is to develop improved WM methods, manage wastes from decontamination and decommissioning activities, provide interim storage for a variety of spent nuclear fuels, and provide research and development support for the disposal of these fuels in a federal repository or other appropriate action. These research and development plans are specifically designed for spent fuel received at the ICPP.

SCOPE AND DEFINITION OF PROBLEM

Since 1953 the ICPP has been processing spent reactor fuel elements from DOE, the Navy, university and other research facilities, and foreign customers to recover highly enriched uranium. However, the INEL's change in mission has resulted in a shift in focus at the ICPP from recovery of spent fuels to optimization of their final disposal.

ICPP's processing mission led to the development of calcine technology, in which liquid radioactive waste—generated from the dissolution of irradiated fuels and recovery of enriched uranium, the decontamination of equipment and facilities, and other processes related to the recovery of uranium—is converted to a stable, granular solid. Liquid waste is held in the acidic form in large stainless-steel tanks contained inside reinforced concrete vaults. Currently, the ICPP has a liquid waste inventory of about 1,900 cubic meters (499,000 gallons) of non-sodium waste and 5,650 cubic meters (1,500,000 gallons) of sodium waste generated from decontamination activities.

Calcine Technology

Liquid radioactive waste can be solidified by fluidized-bed calcination. Calcination drives off water; as the waste is converted from a liquid to a granular solid, the chemical composition of the waste is changed (generally from nitrates to oxides). This transforms the corrosive liquid waste into a non-corrosive solid form and reduces its volume by a factor of about seven. The calcine is transported pneumatically to storage facilities, stainless-steel bins contained in reinforced, seismically hardened concrete vaults. About 3,500 cubic meters (123,000 cubic feet) of calcine is in the current inventory.

Spent fuels received at the ICPP are removed from the shipping casks either under water in special facilities or in dry shielded cells. There are three basic types of spent fuels: graphite fuels (uranium fuel in graphite blocks); Navy fuels (fuel cores used in Naval vessels); and special fuels (fuels other than graphic or Navy). Graphite and Navy fuels are

stored at the ICPP; special fuels are stored at other locations at or off the site. The current fuel inventory includes 368 metric tons total fuel mass graphite fuels (168 in Idaho and 200 in Colorado), 268 metric tons total fuel assembly mass Navy fuels, and 440 metric tons total fuel mass special fuels.

Decontamination of the ICPP facilities to ready them for a standby mode will require a significant effort. The facilities and the systems contaminated from reprocessing operations will be flushed with decontamination solutions. Liquid wastes generated by decontamination and decommissioning efforts will necessitate a long-range WM program. Technology improvements will be needed to minimize waste generation.

Activities at the ICPP must comply with federal and state laws, regulations, and agreements. For example, all DOE facilities must meet hazardous waste land disposal restrictions. Thus, a primary goal of the ICPP Land Disposal Restriction Compliance Plan is the development of a glass-ceramic-type vitrification of the ICPP calcine. The disposal of spent nuclear fuel and high-level waste is governed by the Nuclear Waste Policy Act.

Actions are also being taken in the management of radioactive liquid wastes stored at the ICPP. The Resource Conservation and Recovery Act (RCRA) requires interior coatings on secondary containment (concrete vaults). On January 29, 1990, a Notice of Non-Compliance was issued citing the lack of these interior coatings. Because of high radiation fields and tank configuration difficulties, the interior coatings cannot be readily installed. In a consent order between DOE and the state of Idaho signed on April 3, 1992, the parties agreed to milestones for achieving compliance with the RCRA requirements.

Program Strategy

One of the objectives of the ICPP Spent Fuel and WM Technology Development Program is to develop and demonstrate processes for disposal in a geologic repository of all the spent fuel and high-level waste stored at or scheduled to be shipped to the ICPP (Figure 4-1).

Figure 4-1. Logic Diagram to Process Spent Fuel and High-Level Waste for Disposal. (Source: Draft Spent Fuel and WM Technology Development Plan)

Before preparing spent fuel and high-level waste in an acceptable disposal form, final repository waste acceptance criteria must be established. A logical first step in the program is careful examination of what is known about repository regulations, design, and performance assessment and requirements for waste forms. Thus, the initial effort of the program will be a systems assessment of all aspects of the spent fuel and high-level waste program, with emphasis on identifying areas requiring further study.

To maximize efficient resource use while complying with all requirements, the program will follow an

implementation schedule that includes the following priorities:

- **Compliance with laws and DOE Orders.** Schedules must include sufficient time and resources to ensure compliance.
- **Development of treatment objectives.** Following successful technology selection and demonstration, construction activities for a calcine immobilization facility are forecasted to begin in about 10 years (2003).
- **Assessment of fuel and waste condition.** Some of the fuel that has been in storage for more than 25 years may need to be processed first because of fuel integrity concerns, while some fuel types (e.g., Navy) are manufactured with materials and physical characteristics that may allow safe storage over long periods of time. The difficulties associated with managing the prevention of liquid radioactive waste leakage to the environment may be greater than for the solid, calcined radioactive waste.
- **Determination of status of technologies.** Available processing options should be evaluated and innovative technologies should be reviewed. Technology options for some spent fuels and wastes need to be developed. Life-cycle costs are necessary for technology comparison and evaluation. Definitions of acceptable final waste forms and the ability to produce these forms must be assured before production facilities are constructed and fuels and wastes are processed.
- **Availability of resources.** New or renovated facilities will be required and a sufficient work force must be maintained.

These considerations and others will be continuously used to assess the progress of the program and to establish and adjust priorities. Continuous application of a systems approach will ensure productive use of all resources.

PROGRAM IMPLEMENTATION

Efforts required to support the ICPP Spent Fuel and WM Technology Development Program will include systems analysis, which will be used to address each type of spent fuel and to develop a strategic decision-making model. Technical and institutional factors that affect treatment and

disposal of spent fuel and radioactive waste will be considered and weighed in the model; the model will also accommodate changes to the various factors.

Developing processing and disposal technology for high-level waste and spent fuel may involve an extensive program of laboratory testing, component and subsystem testing, and hot demonstration testing. Verification of spent fuel direct disposal would be pursued initially in parallel with this research and development program. Testing directed toward high-level waste will include a major effort toward calcine immobilization through ceramic form vitrification as well as development of an optimum, sodium-bearing waste treatment and disposal technology. If it is determined to be feasible, appropriate facilities will be developed for direct disposal. However, if it is not feasible, more complicated technologies will be developed and alternative operational facilities will be pursued.

Providing the necessary facilities for developing and demonstrating candidate processing disposal technologies may require construction of a Multifunction Pilot Plant Facility for cold testing and hot demonstration of promising technologies. The extent of the hot and cold cell support area may involve adaptation of existing facilities (i.e., Fuel Processing Restoration and Fluorinel Dissolution Process). The facilities are needed to provide a defensible technology basis for detailed design of the ultimate production facilities. Use of existing pilot plant facilities may be undertaken using RCRA research and development permits, which are valid for one year and may be renewed three times. If air emissions are involved, a state air permit (Permit to Operate) may be required to operate existing pilot plant facilities.

Cold demonstration activities for each of the five research and development programs could be conducted in the Multifunction Pilot Plant Facility using a RCRA permit for each of the programs since they will not be conducted simultaneously. These programs can be conducted in a manner that will not require RCRA Treatment, Storage, and Disposal Facility classification. The Multifunction Pilot Plant Facility will require a state Permit to Operate.

The hot demonstration facility will require a state Permit to Construct and a state Permit to Operate. A RCRA permit will be required if the facility will store wastes for more than 90 days.

Budget and Labor Implications

ICPP's change of mission may result in a potential loss of construction and operating jobs. DOE plans to place as many of the affected employees as possible in available jobs at the INEL.

Funding for transition activities is shown in Table 4-2.

FY-1993 Transition Activities

- Start design of the Multifunction Pilot Plant Facility.

Dollars in Thousands		
Program	FY 1992	FY 1993
Transition Activities	0	31,300

Table 4-2. Funding for Transition Activities.

CHAPTER 5

ENVIRONMENTAL RESTORATION

ENVIRONMENTAL RESTORATION

Change from the Draft SSP

Activities associated with Environmental Restoration are now driven by the Federal Facility Agreement and Consent Order (FFA/CO). (This agreement supercedes the Consent Order and Compliance Agreement that formerly drove the program.) The FFA/CO identifies enforceable deadlines that carry penalties to DOE if not achieved. The FFA/CO requires and schedules cleanup efforts at the INEL.

INTRODUCTION

DOE-ID has responsibility for environmental restoration (ER) activities at the INEL. ER activities at the INEL consist of two fundamental sets of activities: (1) remedial investigations to identify and, where necessary, clean up potential releases from inactive waste sites and (2) decontamination and decommissioning of surplus facilities.

In 1989, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the INEL was added to the Environmental Protection Agency's (EPA's) National Priorities List of Superfund sites. CERCLA regulates the cleanup of inactive waste sites containing hazardous substances, including radioactive substances. The INEL must also comply with the Resource Conservation and Recovery Act (RCRA), which is administered by the state of Idaho under the authority of the Idaho Hazardous Waste Management Act (HWMA). RCRA regulates generation, transportation, treatment, storage, and

disposal of hazardous wastes and corrective action of releases of hazardous waste to the environment.

The DOE, the EPA, and the state of Idaho collectively participate in a Federal Facility Agreement and Consent Order (FFA/CO) for the INEL. This agreement enables the agencies' goal to ensure that releases or threatened releases of hazardous substances at the INEL are thoroughly investigated in accordance with the National Contingency Plan and that appropriate response actions are undertaken and completed as necessary to protect human health and the environment.

As stated in the FFA/CO Action Plan, the purpose of the agreement is to:

- Establish a procedural framework and schedule for developing, prioritizing, implementing, and monitoring appropriate response actions at the INEL in accordance with CERCLA, RCRA, and HWMA;
- Facilitate cooperation, exchange of information, and participation of the parties in such actions;
- Minimize duplication of analyses and documentation;
- Expedite the cleanup process to the maximum extent possible consistent with protection of human health and the environment; and
- Supersede the existing RCRA 3008 (h) Consent Order and Compliance Agreement executed on July 10, 1987.

The involvement by DOE, the EPA, and the Idaho Department of Health and Welfare (IDHW) in the

FFA/CO for the INEL is in accordance with several regulatory requirements. DOE enters under the requirements of CERCLA and the Atomic Energy Act of 1954. The EPA enters under the requirements of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, and RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984. The state of Idaho enters under the requirements of CERCLA, RCRA, the Environmental Protection and Health Act, Idaho Code Paragraph 39-101, and the HWMA.

INEL Environmental Restoration Roadmap

The ER Program has developed a Roadmap for ER work at the INEL. The INEL ER roadmap process followed the approved roadmapping methodology issued by DOE-HQ and promulgated in the Roadmap Methodology Document dated May 15, 1991.

The ER Roadmap's structure is similar to the groupings identified in the FFA/CO for the Waste Area Groups, decontamination and decommissioning activities, and the Underground Storage Tank program. The ER roadmap process was initiated in June 1991; a draft was published for DOE-HQ December 11, 1991.

The mission of the ER Roadmap is to evaluate plans and planning processes and to identify issues and strategies for resolution. This document focuses on the identification, root-cause analysis, and resolution of issues that have an impact on DOE's goal of achieving cleanup of the INEL by the year 2019 while complying with current laws, regulations, and orders.

Ten primary issues were identified and documented in the ER Roadmap. DOE-ID and its contractors are currently pursuing activities to resolve each of these issues.

1. Below Regulatory Concern or de-minimis levels for radioactivity and mixed waste have not been established. Waste contaminated with radioactivity too low to meet Waste Acceptance Criteria at the Radioactive Waste Management Complex (RWMC) cannot be disposed of in a municipal sanitary landfill and must be stored. Therefore, management of potential Below Regulatory Concern or de-minimis material is consuming resources that could be better used for regulated waste.
2. The analytical capacities and capabilities of environmental laboratories may not meet the INEL ER projected requirements for characterization and sampling activities. In addition, no transuranic mixed waste laboratory capacity is available. This lack of laboratory capacity could affect compliance with the FFA/CO enforceable deadlines (currently no limitations exist).
3. Treatment capabilities and capacities for low-level waste and mixed low-level waste at the INEL are not adequate. Additionally, treatment is not available for some of the INEL waste streams, and final disposal options for mixed low-level waste are not available. (This is a crosscutting issue with Waste Management [WM] operations and Land Disposal Restrictions roadmaps).
4. The level of reviews and the number of approvals cause an unnecessary overlap of efforts due to the number of governmental agencies and regulations, laws, and orders involved with compliance.
5. Life-cycle budgets are highly uncertain due to the federal budget processes. This limits the ability to make firm plans because of constant fluctuations.
6. The ER program needs to move from an environment of addressing day-to-day emergencies to one of long-term planning that is integrated fully with WM and Technology Development and, thus, progress to minimize stress to the program.
7. Occasionally, public misunderstanding of the nature of the waste and environmental management disposal techniques can delay ER progress.
8. Demand for people with training and experience in environmental remediation and WM technical activities exceeds present staffing levels.
9. The storage of Land Disposal Restriction waste generated due to the future restoration activities may be illegal without viable treatment options for the waste or exemptions

provided through the CERCLA process. This issue cuts across other roadmaps at the INEL.

10. Reasonably accurate projected ER waste source term, treatment, and disposal technical requirements as well as need dates are not being provided for waste treatment and disposal capability/capacity planning.

DOE began to consider ways to resolve these issues in early 1991. Significant work has been done to resolve the lack of projected ER waste source term data requirements. Two studies are underway to look at the lack of people and analytical laboratory capacity/capability. The other seven issues are being addressed as well.

REMEDIAL INVESTIGATIONS AND ACTIONS

Remedial actions at DOE-ID sites and facilities are conducted to meet location, contaminant, and action-specific requirements imposed by statutes and regulations (including DOE Orders), and to implement guidance and agreements. Activities typically follow a phased approach (i.e., initial investigation, characterization and assessment, evaluation of remedial action alternatives, issuance of a Proposed Plan, publication of a Record of Decision, remedial design, and remedial action) with public involvement activities occurring throughout the process. The technical approach and milestones for specific activities are detailed in the Activity Data Sheets as part of DOE-HQ's Five-Year Plan (see Chapter 1).

Successful completion of the activity is accomplished when DOE-ID and associated regulatory agencies agree that all applicable regulatory requirements and criteria to protect human health and the environment are met. These requirements will have been previously established in a formal Record of Decision with public input.

For some of the ER problems at the INEL, no appropriate technology for restoration has been developed. Many activities of the Technology

Development Division are geared toward providing innovative solutions to restoration problems and procedures, but those activities are still in the developmental stage. For further information, please see Chapter 8, "Technology Development."

Remedial Investigations/Feasibility Studies and Interim Actions

Under CERCLA, a site or Operable Unit that has been identified as potentially requiring remediation will be considered in a Remedial Investigation/Feasibility Study. The objective of the Remedial Investigation is to determine the types, quantities, and locations of contamination at a site and to assess the potential effects this contamination may have on human health and the environment. Potential health effects are documented in a risk assessment, which is part of the Remedial Investigation. Information collected during a Remedial Investigation is then used to help identify and screen potential cleanup alternatives. Full development and detailed analysis of cleanup alternatives are conducted during the Feasibility Study, which generally occurs at the same time as the Remedial Investigation. Interim Actions are similar to Remedial Investigations/Feasibility Studies but are conducted when there is greater urgency to reach the cleanup phase or when the problem is well defined and does not need the detailed study provided by a Remedial Investigation/Feasibility Study.

Following a Remedial Investigation/Feasibility Study or an Interim Action, a Proposed Plan is prepared to identify the preferred alternative. A public comment period of at least 30 days is then held on the Proposed Plan. When the comment period ends and all comments have been considered, a Record of Decision is signed selecting the final remedial action. A remedial action is a series of steps taken to eliminate, control, or monitor the actual or potential release of contaminants from a site to the environment as directed by the Record of Decision (see Figure 5-1).

Figure 5-1. The Remedial Action Process.

Track 1 and Track 2 Studies

Track 1 studies are evaluations of existing data; they may include limited field data collection. The Track 1 process is defined in the FFA/CO and is appropriate for Operable Units that probably will not require further characterization as a basis for the decision for No Further Action. If the data evaluation requires more than minimal field characterization, the Operable Unit should be moved to a Track 2 study. However, a Track 1 study may result in the conclusion that an Interim Action or a Remedial Investigation/Feasibility Study is necessary for the unit. A Track 1 study typically takes 10 months to complete (Figure 5-2).

The Track 2 process is used for Operable Units that require field data collection before a decision can be made for No Further Action, Interim Action, or a Remedial Investigation/Feasibility Study of the unit. Because the Track 2 process is designed for field data collection, sufficient time (18 months) is allowed to develop the needed planning documentation and to conduct the field investigation and laboratory analyses. Track 2 studies end with the development of a Scoping Summary Report. Track 2 investigations could result in the Operable Unit proceeding to Remedial Investigation/Feasibility Study scoping if a No Further Action or Interim Action decision is not justified by the data collected during Track 2 investigations. Track 2 studies may also consist of the integrated demonstration of innovative technologies that represent the potential INEL remediation processes (Figure 5-3).

LF92 0107

Figure 5-2. The Track 1 Process.

Qualitative risk assessments are performed during Track 1 and Track 2 studies, and are used in Track 1 and Track 2 decisions. All No Action decisions reached as part of a Track 1 or Track 2 study will be reviewed as part of the comprehensive Remedial Investigation/Feasibility Study for that Waste Area Group (Figure 5-3).

No Actions

If a No Further Action determination is made on a Track 1 or Track 2 investigation, the interim determination is incorporated into the comprehensive Remedial Investigation/Feasibility Study. If a No Action determination is the preferred alternative for an Interim Action or Remedial Investigation/Feasibility Study, it is then presented for public comment as part of its own Proposed Plan.

LF92 0108

Figure 5-3. The Track 2 Process.

WASTE AREA GROUPS AND OPERABLE UNITS

Major INEL facilities and WM sites scheduled for ER by DOE-ID are identified as Waste Area Groups (WAGs) and are generally grouped by facility (see Figure 5-4). For each WAG, ER activities include an assessment phase to characterize the nature and extent of contamination and a remediation phase. The latter phase is implemented when the extent and nature of contamination constitutes a potential threat to human health and safety or to the environment.

Each WAG is comprised of one or more Operable Units, which are groupings of potential or confirmed release sites that are used to identify similar contamination problems within a WAG. Operable Units consist of one or many potential or confirmed release sites that are considered together for assessment and cleanup activities. Potential release sites are grouped into Operable Units to provide greater management and cleanup efficiency. In general, Operable Units within WAGs are independent of one another; however, within some WAGs the possibility exists that separate Operable Units may be interrelated. Relationships between Operable Units within a given WAG are listed in the WAG descriptions and in Appendix B.

The sections below briefly describe each WAG and provide a general scope of activities being undertaken. A brief description of each Operable Unit within each WAG is provided along with FFA/CO activities, the technical approach and assumptions, an update on what has been accomplished to date, and a summary of future milestones. Funding information and progress charts are also included for each WAG. A summary table showing the relationship of activities at all WAGs is provided as Figure 5-5. Schedules and activities may change based on funding levels and information gained during additional investigations.

Please note that the planning assumptions stated in this section are only assumptions and are in no way intended to predispose the CERCLA process. Assumptions must be made in order to request appropriate funding for the ER program and to establish a planning basis.

Assumption

The key planning assumptions for the ER program are:

- Resources will always be constrained. The size and scope of the ER program mission is such that demand for funding, personnel, and equipment will often exceed what is available. Accordingly, all planning should consider this constraint a key contingency.
- The ER program expects regulations to become more stringent.
- The ER program will plan for all reasonable contingencies, including the difficulty in attaining the WM and/or the Technology Development programs' missions.
- For the duration of the program, adequate technical solutions to ER cleanup problems will be developed.

INEL Major Facility Areas

Figure 5-4. Waste Area Groups at the INEL.

Figure 5-5. FFA/CO Investigation Schedule and Enforceable Milestones.

WASTE AREA GROUP 1: TEST AREA NORTH

Waste Area Group 1 includes the Technical Support Facility (TSF), Water Reactor Research Test Facility, Cask Testing Project, Loss-of-Fluid Test Facility (LOFT), Initial Engine Test Facility, and Specific Manufacturing Capabilities Facility at Test Area North (TAN) (see Figure 5-4). The WAG is divided into 10 Operable Units, including underground storage tanks, pits, ponds, and a railroad turntable. Hazardous, radioactive, and mixed wastes exist at WAG 1. Possible contaminants include asbestos, petroleum products, acids and bases, radioactive rubble and water, laboratory bottles, and sanitary wastes.

Operable Unit 1-01

Physical Description. Operable Unit 1-01 includes 13 sites: two underground storage tanks that contained Loss-of-Fluid Test Facility and Initial Engine Test Facility fire protection system foam stabilizer solutions; a diesel fuel underground storage tank; a gravel pit in which old sulfuric acid was dumped in the late 1950s; a rubble pit that contained nonhazardous construction debris; three below-ground pits designed but never used to capture waste cryogenic materials; one site with three clarifier pits; three asbestos pits/disposal areas; a radioactively contaminated pipe; a radioactively contaminated storage building; and an injection well that handled Initial Engine Test Facility process and sanitary waste. Two tanks, the Initial Engine Test Facility foam tank and the diesel fuel tank, have been removed from the ground. Potential contaminants are acids and other chemicals, petroleum products, nonhazardous construction debris, asbestos, radioactive materials, and sanitary wastes.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will complete Track 1 documentation for all Operable Unit sites. Recommendations for each site may identify it as a No Further Action, transfer it to a Track 2, or transfer it to the comprehensive Remedial Investigation/Feasibility Study. To accomplish this recommendation this effort includes compilation of existing data, data evaluation, and quantitative risk evaluation based on existing data. The TSF-01 diesel tank and fuel spill west of TAN-607 may be

transferred to Operable Unit 1-10. The TSF-11 clarifier pits east of TAN-604 may be transferred to Operable Unit 1-08.

Operable Unit 1-02

Physical Description. Operable Unit 1-02 includes 14 petroleum fuel or waste storage tanks. Ten tanks have been removed. Two other tanks have approved summary assessments, which recommend that these tanks be dropped from the FFA/CO list. Potential contaminants are petroleum products.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will complete Track 1 documentation for all Operable Unit sites. Recommendations for each site may identify it as a No Further Action, transfer it to a Track 2, or transfer it to the comprehensive Remedial Investigation/Feasibility Study. To accomplish this recommendation this effort includes compilation of existing data, data evaluation, and quantitative risk evaluation based on existing data. The TSF-24 oil sumps may be addressed in Operable Unit 1-10. The TSF-13 gasoline tanks north of TAN-610 may be transferred to Operable Unit 1-08.

Operable Unit 1-03

Physical Description. Operable Unit 1-03 consists of four sites: two burn pits, a laboratory bottle disposal site, and a gasoline spill from the TSF service station. Soil in the pits is contaminated with metals and organics resulting from burning trash and waste organic compounds that occurred through the mid-1960s.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either a No Further Action determination, an Interim Action, or transfer to Operable Unit 1-10 and perform a full Remedial Investigation/Feasibility Study. Sites to be transferred to Operable Unit 1-10 are the TSF-38 bottle site, the TSF-03 burn pit, and the Water Reactor Research Test Facility-01 burn pit. The TSF-02 service station spill is a No Action site.

Operable Unit 1-04

Physical Description. Operable Unit 1-04 consists of seven sites: three sumps, two ponds, one pit, and one tank in which acids or caustics were stored or disposed.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either a No Further Action determination, an Interim Action, or transfer to Operable Unit 1-10 and perform a full Remedial Investigation/Feasibility Study. Sample activities will produce one to three drums of potentially mixed waste, which is expected to be treated at the Waste Experimental Reduction Facility. Three underground storage tanks will be removed; these sites will be classified as No Action sites. In addition, the LOFT-02 disposal pond may be transferred to Operable Unit 1-10.

Operable Unit 1-05

Physical Description. Operable Unit 1-05 consists of nine radioactively contaminated sites. Five sites are tanks or piping systems to be closed within the next three years. Two sites contain buried radioactive rubble and metal. Two additional sites include a surface drainage pond and a valve pit containing contaminated metal. The tanks will be coordinated with the Underground Storage Tank Program.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will complete Track 2 scoping for all Operable Unit sites. Recommendations for each site may identify it as a No Further Action or transfer it to the comprehensive Remedial Investigation/Feasibility Study.

Sampling activities will generate one to three drums of potentially mixed waste that will be treated at the Waste Experimental Reduction Facility. Five sites are expected to be transferred to an Interim Action. The TSF-06 TAN soil area will be transferred to Operable Unit 1-10.

Operable Unit 1-06

Physical Description. Operable Unit 1-06 consists of four old spill and disposal sites, including a 5,000-gallon diesel spill, a 10-gallon

sulfuric acid spill, a 1-gallon mercury spill, and a disposal pond for TSF sanitary and process wastes, which could contain radionuclides, metals, and various chemicals.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will complete Track 1 documentation for all Operable Unit sites. Recommendations for each site may identify it as a No Further Action, transfer it to a Track 2, or transfer it to the comprehensive Remedial Investigation/Feasibility Study. To accomplish this recommendation this effort includes compilation of existing data, data evaluation, and quantitative risk evaluation based on existing data. The TSF-08 Heat Transfer Reactor Experiment mercury spill and LOFT-01 diesel fuel spill may transfer to Operable Unit 1-10, the TSF-07 disposal pond may transfer as an Interim Action, and the LOFT-10 sulfuric acid spill will be a No Action site.

Operable Unit 1-07 A and B

Physical Description. Operable Unit 1-07A includes two sites: the TSF-05 injection well, which was remediated in FY 1990, and the groundwater beneath the TSF, which is contaminated with trichloroethylene, tetrachloroethylene, lead, and strontium. Operable Unit 1-07B is the original Remedial Investigation/Feasibility Study for the TAN groundwater under the FFA/CO. During initial scoping meetings on the Remedial Investigation/Feasibility Study, DOE, the EPA, and the IDHW decided to start an Interim Action to begin source remediation while the Remedial Investigation/Feasibility Study was being completed.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will continue the Remedial Investigation/Feasibility Study and Proposed Plan. This documentation goes through various reviews and is provided for public comment. This process leads to the decision of a preferred action and record in the Record of Decision.

Enforceable Deadlines.**1-07A**

Draft Interim Action Record of Decision submitted to the state and EPA for review June 1992

1-07B

Draft Remedial Investigation/Feasibility Study Scope of Work submitted to the state and EPA for review August 1991

Draft Remedial Investigation/Feasibility Study Work Plan submitted to the state and EPA for review January 1992

Draft Remedial Investigation/Feasibility Study Report submitted to the state and EPA for review September 1993

Draft Remedial Investigation/Feasibility Study Record of Decision submitted to the state and EPA for review July 1994

Major Accomplishments To Date.**1-07A**

Draft Interim Action Record of Decision submitted to the state and EPA for review May 1992

1-07B

Draft Scope of Work submitted to the state and EPA for review July 1991

Draft Work Plan submitted to the state and EPA for review December 1992

Operable Unit 1-08

Physical Description. Operable Unit 1-08 includes three sites: a railroad turntable at TSF that is contaminated with mercury, radionuclides, and diesel fuel; the TSF sewage treatment plant and sludge drying beds, which are contaminated with heavy metals and radionuclides; and an old

injection well at the Water Reactor Research Test Facility that was used for sanitary and process waste disposal.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will complete Track 2 scoping for all Operable Unit sites. Recommendations for each site may identify it as a No Further Action or transfer it to the comprehensive Remedial Investigation/Feasibility Study. To accomplish this recommendation this effort includes compilation of existing data, data evaluation, and quantitative risk evaluation based on existing data. The Water Reactor Research Test Facility-05 injection well may be transferred to Operable Unit 1-10; the other sites are expected to be No Action sites.

Operable Unit 1-09

Physical Description. Operable Unit 1-09 includes five sites: three disposal ponds at the Water Reactor Research Test Facility, a french drain, and a well-water spill. Water Reactor Research Test Facility-06 is still used for disposal of sanitary wastes; Water Reactor Research Test Facility-02 and -03 were used for process waste disposal. Hydrazine is the primary contaminant of concern for the Water Reactor Research Test Facility-03 pond.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will complete Track 1 documentation for all Operable Unit sites. Recommendations for each site may identify it as a No Further Action, transfer it to a Track 2, or transfer it to the comprehensive Remedial Investigation/Feasibility Study. To accomplish this recommendation this effort includes compilation of existing data, data evaluation, and quantitative risk evaluation based on existing data. Two sites may be transferred to Operable Unit 1-08 Track 2; three sites will be classified as No Action sites.

Operable Unit 1-10

Physical Description. Operable Unit 1-10 coordinates all cleanup work at the other WAG 1 Operable Units. This unit also includes one site: a leach field where paint wastes, including solvents and heavy metals, were reportedly disposed.

FFA/CO Planned Activities and

Assumptions. There are no planned activities for

FY 1993. Sites to be transferred to Operable Unit 1-10 at this time include the TSF-38 bottle site, the TSF-03 burn pit, the Water Reactor Research Test Facility-01 burn pit, the TSF-06 soil area, the LOFT Facility-02 disposal pond, TSF-24 oil sump, and the Water Reactor Research Test Facility-05 injection well. The comprehensive Remedial Investigation/Feasibility Study for WAG 1 incorporates all sites listed as Tracks 1 or 2 that require further investigation. The comprehensive Remedial Investigation/Feasibility Study will include the cumulative impact of all WAG 1 sites.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
July 1995

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
December 1995

Draft Remedial Investigation/Feasibility Study
Report
submitted to the state and EPA for review
August 1997

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
June 1998

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 1 are shown in Figure 5-6; funding information for WAG 1 is presented in Table 5-1.

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Figure 5-6. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 1.

Dollars in Thousands		
ER Program	FY 1992	FY 1993
WAG 1	4,980	8,855

Table 5-1. Funding for Waste Area Group 1.

WASTE AREA GROUP 2: TEST REACTOR AREA

Waste Area Group 2 is associated with the Test Reactor Area (TRA) (see Figure 5-4). Potential release sites associated with various facilities at TRA include a leaching pond, an underground storage tank, rubble piles, cooling towers, an injection well, french drains, and assorted spills where hazardous and mixed wastes may exist. WAG 2 is divided into 13 Operable Units. Possible contaminants include petroleum products, acids, polychlorinated biphenyls (PCBs), radioactive wastes, and heavy metals.

Operable Unit 2-01

Physical Description. Operable Unit 2-01 is the Paint Shop Ditch, which is an open ditch where paint shop wastes such as paints, thinners, and spent solvents may have been discarded until 1982.

FFA/CO Planned Activities and

Assumptions. The Paint Shop Ditch has been investigated as a Track 1. Track 1 findings warranted No Further Action.

Operable Unit 2-02

Physical Description. Operable Unit 2-02 includes five underground storage tanks that contained petroleum products. All five of the tanks have been removed from the ground, and the initial site characterizations found no contamination at the sites. No further action is required for this unit.

FFA/CO Planned Activities and

Assumptions. Operable Unit 2-02 has been investigated as Track 1. Track 1 findings warranted No Further Action.

Operable Unit 2-03

Physical Description. Operable Unit 2-03 contains a number of spills. While the nature and extent of contamination is unknown, it is expected to be small for the majority of the spill sites. The sites include a pit used to dispose of the residue from an acid spill that occurred in 1983; a french drain used to catch overflow run-off from a sulfuric

acid tank used in a demineralizer operation; a site used to mix demineralizer brine; an acid pipe tunnel that received overflow from an acid pipe; and a fuel oil tank spill.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either a No Action determination, an Interim Action, or transfer to Operable Unit 2-13 to perform a full Remedial Investigation/Feasibility Study. Six sites will require investigation and analysis under Track 2 documentation in FY 1993.

Operable Unit 2-04

Physical Description. Operable Unit 2-04 contains a number of spills. While the nature and extent of contamination is unknown, it is expected to be small for the majority of the spill sites. The sites include the North Storage Area (TRA-34) that, based upon past usage, is likely to have soil contamination from facility operations; a contaminated area that resulted from spills off a former loading dock (TRA-722); the TRA PW13 diesel fuel contamination found in a perched water well; three PCB spills from transformers; and two areas of petroleum product soil contamination.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either No Action or Interim Action or will transfer it to Operable Unit 2-13 to perform a full Remedial Investigation/Feasibility Study. Preliminary assessments will be performed on eight sites in FY 1993 with Track 2 documentation to follow.

Operable Unit 2-05

Physical Description. Operable Unit 2-05 includes four radioactive waste tank sites. One unit consists of three underground hot-waste catch tanks and the area where a fourth leaking tank was removed in the 1960s. Additionally, there is a site where four hot-waste tanks were removed and replaced with four new tanks in 1986. Another site includes an inactive radioactive contaminated tank located underground (TRA-614).

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either No Action or Interim Action or will transfer it to Operable Unit 2-13 to perform a full Remedial Investigation/Feasibility Study. No Further Action determinations are expected for two sites: TRA-19 and TRA-603/605. Track 2 characterization will be required for TRA-15 and TRA-16 with TRA-16 ultimately classified as a No Action site after tank removal and TRA-15 directed to an Interim Action and future Record of Decision. Track 2 characterization will include removal of the tank at TRA-16.

Operable Unit 2-06

Physical Description. Operable Unit 2-06 includes miscellaneous rubble piles in the area outside the TRA fence. These sites have not been characterized and the origin of most is uncertain, but it is likely that only general construction debris is present in the piles.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either a No Action determination, an Interim Action, or transfer to Operable Unit 2-13 to perform a full Remedial Investigation/Feasibility Study. It is anticipated that following Track 2 documentation No Further Action will be recommended.

Operable Unit 2-07

Physical Description. Operable Unit 2-07 consists of the Engineering Test Reactor cooling tower basin, Material Test Reactor areas, Advanced Test Reactor cooling tower basin and cooling tower, and soil contaminated with chromium at TRA-653. The cooling tower sites are suspected of being contaminated with chromium because chromates were used as a corrosion inhibitor in cooling water at the TRA until 1972.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either a No Action determination, an Interim Action, or transfer to Operable Unit 2-13 to perform a full Remedial Investigation/Feasibility Study. No Action determinations are expected for two sites, while

Track 2 documentation will be performed on two others. An Interim Action is anticipated for TRA-36 and TRA-38 resulting in a Remedial Investigation/Feasibility Study and eventual Record of Decision.

Operable Unit 2-08

Physical Description. Operable Unit 2-08 is the Material Test Reactor canal in the basement of the Material Test Reactor building. Radioactive water is known to have leaked through the floor of the canal during the years of reactor operation.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will conduct Track 2 efforts to recommend either a No Action determination, an Interim Action, or transfer to Operable Unit 2-13 to perform a full Remedial Investigation/Feasibility Study. Preliminary assessment will be performed on the Material Test Reactor canal with the expectation that following investigations No Further Action will be recommended.

Operable Unit 2-09

Physical Description. Operable Unit 2-09 consists of the Cold Waste Pond and sewage treatment system at the TRA. The Cold Waste Pond was constructed in 1982 and receives primarily cooling tower blowdown water. The sewage treatment system has been in use since the 1950s. It is suspected that they both may have received small quantities of either hazardous or radioactive wastes.

FFA/CO Planned Activities and

Assumptions. In FY 1992, Track 2 field activities were performed. No Action determinations are expected for all sites except the TRA Sewage Leach Pond which will go to an Interim Action and eventual Record of Decision.

Operable Unit 2-10

Physical Description. Operable Unit 2-10 consists of the Warm Waste Pond sediments. The Warm Waste Pond was originally constructed in 1952 and is designed to receive low-level radioactive wastewater. Radioactive contamination is the primary health concern associated with the pond sediments.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will include treatability studies under an Interim Action to investigate remedial strategies for the Warm Waste Pond.

Enforceable Deadlines.

Draft Interim Action Record of Decision submitted to the state and EPA for review November 1991

Major Accomplishments To Date.

Final Record of Decision approved by the state and EPA December 1991

Operable Unit 2-11

Physical Description. Operable Unit 2-11 consists of the Warm Waste Leach Pond; the Retention Basin; and the TRA Waste Disposal well, sampling pit, and sump. The Retention Basin is a large underground concrete basin that receives the wastes pumped to the Warm Waste Pond. The disposal well is an injection well used between 1964 and 1982 to dispose of cooling tower blowdown water. Radioactive contamination is the primary health concern associated with the Retention Basin.

FFA/CO Planned Activities and

Assumptions. A Track 2 investigation based on existing data was performed in 1992. The result led to a No Further Action recommendation.

Operable Unit 2-12

Physical Description. Operable Unit 2-12 consists of the perched water zones underlying the TRA. These zones are a result of water from the Cold Waste Pond, Warm Waste Pond, Chemical Waste Pond, and Sewage Lagoons infiltrating into the ground and perching on low permeability layers in the basalt. A zone of perched water is found at approximately the 50-foot level and another larger zone is found at the 150-foot level below land surface.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will continue the Remedial Investigation/Feasibility Study and

Proposed Plan. This documentation goes through various reviews and is provided for public comment. This process leads to the decision of a preferred action, which is recorded in the Record of Decision. Efforts in FY 1993 will perform radiological, chemical, and water level monitoring of the perched water system at 11 wells. These monitoring efforts are the result of the Record of Decision.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study Scope of Work submitted to the state and EPA for review April 1991

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review November 1992

Draft Remedial Investigation/Feasibility Study Record of Decision submitted to the state and EPA for review September 1993

Major Accomplishments To Date.

Draft Remedial Investigation/Feasibility Study Scope of Work submitted to the state and EPA for review April 1991

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review November 1991

Operable Unit 2-13

Physical Description. Operable Unit 2-13 coordinates remediation work at the smaller TRA units that require cleanup following characterization. This Operable Unit also contains the Chemical Waste Pond. The Chemical Waste Pond, built in the early 1960s, receives wastewater from the TRA Demineralizer Plant. Heavy metals, primarily barium, mercury, and lead, have been found in the alluvium below the Chemical Waste Pond.

FFA/CO Planned Activities and

Assumptions. Activities will continue the Remedial Investigation/Feasibility Study and

Proposed Plan. This documentation goes through various reviews and is provided for public comment. This process leads to the decision of a preferred action, which is recorded in the Record of Decision. The comprehensive Remedial Investigation/Feasibility Study for WAG 2 incorporates all sites listed as Tracks 1 and 2 that require further investigation. The comprehensive Remedial Investigation/Feasibility Study will include the cumulative impact of all WAG 2 sites. Activities for this Operable Unit are not expected to begin until FY 1996.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
July 1996

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
December 1996

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
August 1998

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
June 1999

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 2 are shown in Figure 5-7; funding information for WAG 2 is presented in Table 5-2.

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Figure 5-7. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 2.

Dollars in Thousands		
ER Program	FY 1992	FY 1993
WAG 2	7,239	5,228

Table 5-2. Funding for Waste Area Group 2.

WASTE AREA GROUP 3: IDAHO CHEMICAL PROCESSING PLANT

Waste Area Group 3 provides the assessment and cleanup of the environmental release sites at the Idaho Chemical Processing Plant (ICPP) (see Figure 5-4) where releases of hazardous substances have occurred. Contaminants include organics, asbestos, radionuclides, metals, corrosives, petroleum wastes, and mixed wastes. WAG 3 is divided into 13 Operable Units.

Operable Unit 3-01

Physical Description. Operable Unit 3-01 consists of three transformer yards and a staging area contaminated with polychlorinated biphenyls (PCBs).

FFA/CO Planned Activities and Assumptions. All four sites were investigated as Track 1. They have all been approved by the Remedial Project Manager as No Further Action sites.

Operable Unit 3-02

Physical Description. Operable Unit 3-02 includes sites that contain hexane and kerosene spills; paint and paint solvent discharges resulting in mercury contamination; contaminated paint chips and pad; ICPP injection well that received service waste until 1984; ICPP Gravel Pits #1 and #2; a gas storage building; fire training pits; a solid waste storage bin; a drum storage area; a soil contamination and sulfuric acid spill; sewage treatment plant lagoons; a fly ash pit; and an abandoned gasoline tank.

FFA/CO Planned Activities and Assumptions. This Operable Unit contains 19 sites have been investigated as Track 1s. Three of the sites have been approved as No Further Action sites; four of the sites are awaiting a decision. One site has been recommended for Track 2. The remaining sites are in the formal review process.

Operable Unit 3-03

Physical Description. Operable Unit 3-03 addresses the percolation ponds, which are used for the discharge of ICPP service wastewater only.

FFA/CO Planned Activities and Assumptions. This Operable Unit will be investigated as Track 1.

Operable Unit 3-04

Physical Description. Operable Unit 3-04 includes numerous buildings at the ICPP that have transite (60% asbestos, 40% Portland cement) on outer walls and roofs. Many friable areas of the transite are known to exist.

FFA/CO Planned Activities and Assumptions. This Operable Unit has been investigated as a Track 1. The site has been recommended to be included in the Comprehensive WAG 3 Remedial Investigation/Feasibility study. The decision may change if the asbestos is treated by the maintenance of the asbestos abatement program.

Operable Unit 3-05

Physical Description. Operable Unit 3-05 consists of the old sewage treatment plant. Radioactive decontamination showers drained into this plant, which was decommissioned in 1982.

FFA/CO Planned Activities and Assumptions. This Operable Unit has been investigated as a Track 2 and the Summary Report has been reviewed by DOE-ID and comments are being incorporated.

Operable Unit 3-06

Physical Description. Operable Unit 3-06 includes four sites where contamination is known to have occurred. These sites include two sites with contaminated soil from the tank farm, a lime pit and french drain, and a pilot plant storage area.

FFA/CO Planned Activities and Assumptions. The four sites in the Operable Unit have been investigated as Track 1s. One of the sites has been approved as a No Further Action site. Two of the sites are in the formal review process.

Operable Unit 3-07

Physical Description. Operable Unit 3-07 includes 11 sites: one site resulted in air release

from a leak that developed in a line during a steam flushing operation and seven sites contain contaminated soil from spills and pipe leaks in the tank farm. Other sites included are: strontium-90 in the perched water at well 55-06; soil contaminated from the pressurization of the solid storage cyclone; and a decontamination spill. Radionuclides, mercuric nitrate, and nitric acid are the major contaminants suspected.

FFA/CO Planned Activities and

Assumptions. The 11 sites contained in this Operable Unit have been investigated under the Track 2 process. The Track 2 investigation has been completed through the field season. The summary report is now being prepared.

Operable Unit 3-08

Physical Description. Operable Unit 3-08 consists of six sites: a solvent burner, contaminated soil in the tank farm, contaminated soil north and west of the main stack, pressurization of the solid storage cyclone, a transfer line leak, and a decontamination spill from the old Waste Calcining Facility. Radionuclides, mercuric nitrate, and nitric acid are the major contaminants suspected.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as a Track 2. The Track 2 investigation has been completed through the field season. The summary report is now being prepared.

Operable Unit 3-09

Physical Description. Operable Unit 3-09 includes 15 sites; 13 of the 15 sites are in the ICPP-603 area. The contaminated areas around ICPP-603 include contaminated soils resulting from settling basins, vault and dry wells, soil storage areas and a temporary storage area, a pipeline break, a sludge and water release, a transfer line leak, contaminated soil east of the dry fuel storage area, and an abandoned radioactive storage tank. One of the sites was a radioactive particulate air release resulting from the failure of a cell ventilation filter.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as a Track 2. The Track 2

investigations for this unit are planned to start in FY 1993.

Operable Unit 3-10

Physical Description. Operable Unit 3-10 includes a drainage ditch, a grease pit, a pilot plant release, and an area of nitric acid contamination. These sites involve known and suspected releases of chemicals (primarily nitric and hydrofluoric acid) to the soil.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as a Track 2. The Track 2 process is planned to begin in FY 1994 for this site.

Operable Unit 3-11

Physical Description. Operable Unit 3-11 consists of two sites: the Chemical Storage Area and the Evaporator Overhead Pipeline. The major contaminants of concern are radionuclides, nitric and hydrofluoric acid, and heavy metals.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as a Track 2. The Track 2 process for this site is planned to begin in FY 1993.

Operable Unit 3-12

Physical Description. Operable Unit 3-12 consists of units recently added to the FFA/CO. This Operable Unit contains three sites, including a vent tunnel drain leak, an abandoned vessel off-gas line, and an abandoned transfer line.

FFA/CO Planned Activities and

Assumptions. This Operable Unit has been investigated as a Track 1. The Track 1 documents are undergoing formal review.

Operable Unit 3-13

Physical Description. Operable Unit 3-13 consists of the comprehensive Remedial Investigation/Feasibility Study, perched water zones at the ICPP, and other miscellaneous units requiring investigation. This Operable Unit also includes the hydrofluoric acid storage tank and dry well and a french drain used for disposal of specific acids.

FFA/CO Planned Activities and

Assumptions. Operable Unit 3-13 will be investigated as a Remedial Investigation/Feasibility Study. Information and decisions from WAG 3 Track 1 and Track 2 activities as well as any interim Records of Decision will be integrated.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
August 1995

Draft Remedial Investigation/Feasibility Study
Work Plan

submitted to the state and EPA for review
January 1996

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
September 1997

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
July 1998

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 3 are shown in Figure 5-8; funding information for WAG 3 is presented in Table 5-3.

LF92 0076

Figure 5-8. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 3.

Dollars in Thousands

ER Program	FY 1992	FY 1993
WAG 3	4,600	3,936

Table 5-3. Funding for Waste Area Group 3.

WASTE AREA GROUP 4: CENTRAL FACILITIES AREA

The Central Facilities Area (CFA), Waste Area Group 4, includes spills, underground storage tanks, the landfill, ponds, leach fields, and leach pits (see Figure 5-4). This WAG is divided into 13 Operable Units. Potential contaminants include chemicals, solvents, polychlorinated biphenyls (PCBs), asbestos, unexploded ordnance, heavy metals, and construction debris.

Operable Unit 4-01

Physical Description. Operable Unit 4-01 includes the CFA gravel pit and a french drain. Both sites are suspected of containing ordnance (5-inch shells from U.S. Navy Artillery Range operations).

FFA/CO Planned Activities and

Assumptions. This Operable Unit is being transferred to Operable Unit 10-05. Operable Unit 10-05 will be investigated as an Interim Action.

Operable Unit 4-02

Physical Description. Operable Unit 4-02 consists of four dry wells that have no record of receiving hazardous materials. The dry wells consist of either concrete pipe construction or groups of rocks in the ground that may have been used as a drainage. Again, there is no record of any of these dry wells being used to dispose of hazardous materials.

FFA/CO Planned Activities and

Assumptions. Track 1 efforts will be performed in FY 1993 to perform investigation of potential contaminants. It is expected that a No Action determination will be made.

Operable Unit 4-03

Physical Description. Operable Unit 4-03 contains 21 steel underground storage tanks; 20 tanks contained petroleum products and one contained sulfuric acid. More than half of the underground storage tanks have been removed and checked for leakage. One underground storage tank was found to have leaked and is being dealt with under the Underground Storage Tank Program. The remaining removed underground

storage tanks showed no leakage, were removed from the area, and their holes backfilled with dirt.

FFA/CO Planned Activities and

Assumptions. Track 1 efforts will be initiated in FY 1993 to perform investigation of potential contaminants. It is expected that a No Action determination will be made. Tank removals will continue under the Underground Storage Tank Program. Any sites requiring additional action will transfer to Operable Unit 4-13.

Operable Unit 4-04

Physical Description. Operable Unit 4-04 consists of three drum docks where drums were stored prior to disposal. It is suspected that some chemicals may have leaked on the ground during storage.

FFA/CO Planned Activities and

Assumptions. Track 1 investigations are being reviewed to determine actions required.

Operable Unit 4-05

Physical Description. Operable Unit 4-05 consists of a pond used to collect liquids that drained from building CFA-674 between 1954 and 1965 and a bermed area used by the Fire Department for fire fighter training. The pond may contain mercury; the bermed area is saturated with oil.

FFA/CO Planned Activities and

Assumptions. No efforts will be performed in FY 1993. Future activities will perform Track 2 investigation with results leading to a No Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study remedial action.

Operable Unit 4-06

Physical Description. Operable Unit 4-06 includes two areas that may contain lead contamination, one of which is a paint shop drain. CFA-06 was used between 1953 and 1980 as a lead shop where lead shot, bricks, and scraps were stored and a spray paint booth drained. Smoke and fumes from pouring lead may have settled on the ground outside this building. CFA-43 is an area

where lead materials and scrap were stored. CFA-44 is a drain from a paint spray booth which drained outside the building onto the ground.

FFA/CO Planned Activities and

Assumptions. No efforts will be performed in FY 1993. Future activities will perform Track 2 investigation with results leading to a No Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study remedial action.

Operable Unit 4-07

Physical Description. Operable Unit 4-07 consists of two locations where french drains were installed adjacent to laboratories and received laboratory effluent that may have contained acids, solvents, and radionuclides.

FFA/CO Planned Activities and

Assumptions. Track 1 investigations are being reviewed to determine actions required.

Operable Unit 4-08

Physical Description. Operable Unit 4-08 includes the CFA sewage plant, septic tank, and drain field. The sewage system received effluent containing some low-level radioactivity from laundry operations.

FFA/CO Planned Activities and

Assumptions. No efforts will be performed in FY 1993. Future activities will perform Track 2 investigation with results leading to a No Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study remedial action.

Operable Unit 4-09

Physical Description. Operable Unit 4-09 consists of three areas: a transformer yard where transformer oil, which may contain PCBs, may have leaked, and two locations where fuel oil was spilled or leaked into the ground.

FFA/CO Planned Activities and

Assumptions. No efforts will be performed in FY 1993. Future activities will perform Track 2 investigation with results leading to a No Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study remedial action. It is

expected that investigations will require a Remedial Investigation/Feasibility Study for this Operable Unit.

Operable Unit 4-10

Physical Description. Operable Unit 4-10 is an old municipal-type landfill (Landfill I) that operated between 1951 and 1970. The landfill received cafeteria waste, construction debris, paint thinners, solvents, asbestos, some chemicals, and other miscellaneous wastes from site operations.

FFA/CO Planned Activities and

Assumptions. A Track 2 investigation will be completed in FY 1993 to determine actions required. The Track 2 investigation will lead to a No Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study remedial action. The landfill may require a cap to help prevent surface water from creating pathways for the contaminants.

Operable Unit 4-11

Physical Description. Operable Unit 4-11 is the CFA Motor Pool Pond that received effluent from the vehicle maintenance shop operations between 1951 and 1983.

FFA/CO Planned Activities and

Assumptions. Remedial Investigations have been performed on the CFA Motor Pool Pond. Comments are continuing to be received and responded to on the Remedial Investigation. Efforts in FY 1993 are expected to finalize the Record of Decision with a No Further Action determination.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review
December 1991

Draft Record of Decision
submitted to the state and EPA for review
October 1992

Major Accomplishments To Date.

Draft Remedial Investigation
submitted to the state and EPA for review
April 1992

Operable Unit 4-12

Physical Description. Operable Unit 4-12 includes two municipal type landfills (Landfills II and III). These landfills received cafeteria waste, construction debris, paint thinners, solvents, asbestos, some chemicals, and other miscellaneous wastes from site operations.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will continue the Remedial Investigation/Feasibility Study and Proposed Plan. This documentation goes through various reviews and is provided for public comment. This process leads to the decision of a preferred action, which is recorded in the Record of Decision. It is expected that the two landfills may require caps to limit the level of surface water creating pathways for the contaminants.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
August 1992

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
January 1993

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
September 1994

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
July 1995

Operable Unit 4-13

Physical Description. Operable Unit 4-13 coordinates remedial work at other waste units in

the CFA requiring cleanup following characterization.

FFA/CO Planned Activities and

Assumptions. Activities in FY 1993 will continue the Remedial Investigation/Feasibility Study and Proposed Plan. This documentation goes through various reviews and is provided for public comment. This process leads to the decision of a preferred action, which is recorded in the Record of Decision. It is expected that the two landfills may require caps to limit the level of surface water creating pathways for the contaminants. The comprehensive Remedial Investigation/Feasibility Study for WAG 4 incorporates all sites listed as Track 1 and Track 2 that require further investigation. The comprehensive Remedial Investigation/Feasibility Study will include the cumulative impact of all WAG 4 sites.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
August 1996

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
January 1997

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
September 1998

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
July 1999

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 4 are shown in Figure 5-9; funding information for WAG 4 is presented in Table 5-4.

Figure 5-9. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 4.

Dollars in Thousands		
ER Program	FY 1992	FY 1993
WAG 4	1,576	1,391

Table 5-4. Funding for Waste Area Group 4.

WASTE AREA GROUP 5: POWER BURST FACILITY/ AUXILIARY REACTOR AREA

Waste Area Group 5, the Power Burst Facility (PBF) and Auxiliary Reactor Area (ARA) region (see Figure 5-4), is divided into 13 Operable Units, which include evaporation ponds, sanitary sewers, waste sumps, burial grounds, and storage tanks. Potential contaminants are petroleum products, hazardous waste, radionuclides, metals, contaminated soil, rubble, and debris.

Operable Unit 5-01

Physical Description. Operable Unit 5-01 contains an ARA-I evaporation pond, ARA-I drain, three radionuclide tanks, and a fuel oil radionuclides detention tank.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will perform Track 1 investigations with results leading to a decision for a No Action recommendation, Track 2 efforts, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is anticipated that these site investigations will recommend No Further Action.

Operable Unit 5-02

Physical Description. Operable Unit 5-02 includes the PBF Special Power Excursion Reactor Test-I leach pond, which received wastewater from the reactor; the Special Power Excursion Reactor Test-III large leach pond, which received low-level contaminated water from the reactor; and the Special Power Excursion Reactor-IV Lake at PBF-758, which was used to collect raw cooling water. There is no record of hazardous waste at these sites.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will perform Track 1 investigations with results leading to a decision for a No Action recommendation, Track 2 efforts, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is anticipated that these site investigations will recommend No Further Action. The Special Power Excursion Reactor-I and -III ponds have previously been decontaminated and

decommissioned and should require No Further Action.

Operable Unit 5-03

Physical Description. Operable Unit 5-03 contains the PBF cooling tower area and drainage ditch; the PBF reactor pit (PBF-621), which received blowdown water containing small amounts of corrosion inhibitors from the PBF facilities; the PBF reactor oil drum temporary storage area (concrete pad); the PBF rubble pile used during PBF construction; and the PBF Special Power Excursion Reactor-IV blowdown pit (PBF-716), which may have received radioactively contaminated water.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will perform Track 1 investigations with results leading to a decision for a No Action recommendation, Track 2 efforts, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is anticipated that these site investigations will recommend No Further Action. Any contamination requiring action will be addressed and revisited in the Operable Unit 5-12 comprehensive Remedial Investigation/Feasibility Study.

Operable Unit 5-04

Physical Description. Operable Unit 5-04 contains the previously removed PBF control area fuel oil tank PBF-608, the active Special Power Excursion Reactor-II fuel oil tank at PBF-612, and the previously removed Special Power Excursion Reactor-III fuel oil tank at PBF-609.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will continue to perform Track 1 investigations with results leading to a decision for a No Action recommendation, Track 2 efforts, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is anticipated that the FY 1993 investigations will recommend No Further Action. Removal of underground storage tanks from this Operable Unit will be done under the Underground

Storage Tank Program. Sampling indicates leakage may have occurred at PBF-608. This Operable Unit will be incorporated in Track 2 investigations and revisited in the Operable Unit 5-12 comprehensive Remedial Investigation/Feasibility Study.

Operable Unit 5-05

Physical Description. Operable Unit 5-05 includes the ARA-II Stationary Low-Power Reactor-1 burial ground, a 4.6-acre area where the Stationary Low-Power Reactor-1 cleanup debris was buried. It is suspected to contain contaminated lead shielding.

FFA/CO Planned Activities and

Assumptions. Commencement of Track 2 scoping efforts are scheduled for FY 1993. This investigation will lead to a decision to proceed to an Interim Action or a Remedial Investigation/Feasibility Study and Record of Decision for final action decision. It is anticipated that investigations will lead to a Remedial Investigation/Feasibility Study with the Record of Decision proposing capping and long-term monitoring. Three wells will be drilled and completed in the aquifer to investigate the groundwater at the ARA facilities.

Operable Unit 5-06

Physical Description. Operable Unit 5-06 includes the ARA-III radioactive leach pond, which received water contaminated with radionuclides and corrosion inhibitors, and the previously removed ARA-IV Leach Pit No. 1, which received radioactive wastewater.

FFA/CO Planned Activities and

Assumptions. Commencement of Track 2 efforts are expected for FY 1993. Track 2 investigations will lead to No Further Action, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision for cleanup decision. ARA-IV Test Area Leach Pit has been decontaminated and decommissioned and ARA-III is scheduled for decontamination and decommissioning, but the leach pond has not been included for remediation in the decontamination and decommissioning work scope. This Track 2 site is likely to lead to a Remedial Investigation/Feasibility Study.

Operable Unit 5-07

Physical Description. Operable Unit 5-07 contains the ARA-I Pad (ARA-627), where contaminated soil exists, and the ARA-I Sanitary Septic Tank and Seepage Pit (ARA-746). Both of those sites are radioactively contaminated.

FFA/CO Planned Activities and

Assumptions. Commencement of Track 2 efforts will be completed in FY 1993. Track 2 investigations will lead to No Further Action, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision for cleanup decision. Sampling activities will support Track 2 investigations. It is expected that from these investigations, No Further Action will be recommended, as decontamination and decommissioning efforts should remediate both sites during the scheduled activities planned to be initiated in FY 1994 at ARA-I.

Operable Unit 5-08

Physical Description. Operable Unit 5-08 contains the PBF Reactor Area warm waste injection well, which was used for low-level radioactive waste water disposal; the PBF Special Power Excursion Test-I seepage pit (PBF-750), which received regeneration solutions from the Special Power Excursion Test-I demineralizers; and the PBF Reactor Area corrosive waste injection well (PBF-302), which received regeneration solutions from PBF demineralizers and secondary cooling water from the PBF reactor.

FFA/CO Planned Activities and

Assumptions. Operable Unit 5-08 will be investigated as Track 2. The seepage pit will be sampled for radionuclides, metals, and organics. The PBF Reactor Area warm waste injection well may be contaminated with radionuclides and the PBF Reactor Area corrosive waste injection well may contain excessive chromium. Remediation decisions will follow the Track 2 process. Three wells will be drilled and completed in the aquifer to investigate the groundwater at the PBF facilities.

Operable Unit 5-09

Physical Description. Operable Unit 5-09 includes the PBF Special Power Excursion Test-II leach pond, the PBF Special Power Excursion Test-III small leach pond, and the PBF Special

Power Excursion Test-IV leach pond (PBF-728), all of which received regeneration solutions and low-level radioactive wastewater from operations.

FFA/CO Planned Activities and

Assumptions. Operable Unit 5-09 will be investigated as Track 2. The PBF Special Power Excursion Test-II leach pond and the PBF Special Power Excursion Test-III small leach pond have been decontaminated and decommissioned. The PBF Special Power Excursion Test-IV leach pond may require additional sampling. For planning purposes, results from the Track 2 studies will likely support a No Action decision.

Operable Unit 5-10

Physical Description. Operable Unit 5-10 includes the ARA-I Chemical/Evaporation Pond. The primary contaminant of concern is low-level radioactivity.

FFA/CO Planned Activities and

Assumptions. A Remedial Investigation has been performed on the evaporation pond with the results documented in the Record of Decision. The Record of Decision supports No Further Action.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review
December 1991

Draft Record of Decision submitted to the state and EPA for review
October 1992

Major Accomplishments To Date.

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review
December 1991

Draft Record of Decision submitted to the state and EPA for review
October 1992

Operable Unit 5-11

Physical Description. Operable Unit 5-11 includes an ARA-III sanitary sewer leach field and

septic tank. Primary contaminants include metals and organics.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will complete a Track 1 investigation with results leading to either a No Action determination, Track 2 efforts, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is anticipated that the investigations will recommend No Further Action.

Operable Unit 5-12

Physical Description. Operable Unit 5-12 is the comprehensive Remedial Investigation/Feasibility Study for WAG 5 that covers the overall PBF/ARA region and coordinates remedial work at Operable Units requiring cleanup following characterization.

FFA/CO Planned Activities and

Assumptions. A comprehensive Remedial Investigation/Feasibility Study will be performed for WAG 5 to cover all activities requiring further investigation from Tracks 1 and 2. The comprehensive Remedial Investigation/Feasibility Study will include the cumulative impact of all WAG 5 sites. No activities are planned for this effort in FY 1993 but will follow the completion of all preceding Operable Unit investigations.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study Scope of Work submitted to the state and EPA for review
September 1996

Draft Remedial Investigation/Feasibility Study Work Plan submitted to the state and EPA for review
February 1997

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review
October 1998

Draft Remedial Investigation/Feasibility Study Record of Decision submitted to the state and EPA for review
August 1999

Operable Unit 5-13

Physical Description. Operable Unit 5-13 includes the PBF corrosive waste disposal sump and the PBF evaporation pond. The primary contaminant is chromium with minor radionuclide contamination.

FFA/CO Planned Activities and

Assumptions. Interim Action efforts are underway to stabilize the Operable Unit and perform remedial action on specifically identified contamination sources to eliminate the immediate threat to human health and the environment. Following the Interim Action the Operable Unit will be further investigated under the WAG 5 comprehensive Remedial Investigation/Feasibility

Study to determine whether future remediation is required.

Enforceable Deadlines.

Draft Interim Action Record of Decision submitted to the state and EPA for review
June 1992

Interim Action Record of Decision signed and approved
September 1992

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 5 are shown in Figure 5-10; funding information for WAG 5 is presented in Table 5-5.

Figure 5-10. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 5.

Dollars in Thousands

ER Program	FY 1992	FY 1993
WAG 5	1,236	581

Table 5-5. Funding for Waste Area Group 5.

WASTE AREA GROUP 6: EXPERIMENTAL BREEDER REACTOR-1/ BOILING WATER REACTOR EXPERIMENT

Waste Area Group 6 (see Figure 5-4) consists of the Experimental Breeder Reactor-I (EBR-1) and the Boiling Water Reactor Experiment (BORAX) areas. Both of these areas were originally constructed to house test reactors and have since been decommissioned. EBR-1 is now a National Historic Landmark open to the public. Historically, the BORAX area housed five reactors, but many of the facilities have been dismantled or moved, and no operations (other than monitoring) take place in the area. Potential contaminants from past operations are organic and inorganic chemicals, radionuclides, metals, and sanitary waste. The boundaries of the WAG are directly related to the facility locations and areas immediately adjacent to them.

WAG 6 consists of five Operable Units, including the BORAX-1 burial site, a trash dump, fuel oil tanks, septic tanks, and a leach pond. Sites to be investigated are primarily old tanks, but also include a small spill area and several liquid and solid waste disposal locations.

Operable Unit 6-01

Physical Description. Operable Unit 6-01 consists of the BORAX-I Burial Site. The contaminants of concern are metals, organics, and radionuclides.

FFA/CO Planned Activities and

Assumptions. Track 2 activities are required for investigation of the BORAX-I Burial Site. No activity will be performed in FY 1993 but will begin in FY 1994. Track 2 investigation will lead to a No Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. Results requiring further investigation after Track 2 will be transferred to the overall INEL Comprehensive Remedial Investigation/Feasibility Study under WAG 10.

Operable Unit 6-02

Physical Description. Operable Unit 6-02 consists of three sites, including a leach pond previously used for wastewater disposal, a septic

tank and leach pond used for sanitary wastewater disposal, and a trash dump used for nonradioactive reactor and office waste disposal.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will continue Track 1 assessments. Investigations will lead to a No Action determination, a Track 2 investigation, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision.

Efforts performed to date are likely to lead this Operable Unit to additional investigations under Track 2.

Operable Unit 6-03

Physical Description. Operable Unit 6-03 contains 10 out-of-service petroleum underground storage tanks.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will continue Track 1 assessments. Investigations will lead to a No Action determination, a Track 2 investigation, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. These tanks will be removed through the Underground Storage Tank Program. It is expected that some tanks will show evidence of leakage requiring Track 2 investigation of the tank site.

Operable Unit 6-04

Physical Description. Operable Unit 6-04 consists of potentially radioactively contaminated soil resulting from a spill. Contaminants may include radionuclides, organics, and inorganics.

FFA/CO Planned Activities and

Assumptions. FY 1993 activities will continue Track 1 assessments. Investigations will lead to a No Action determination, a Track 2 investigation, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. Track 1 investigations are expected to result in a No Further Action determination.

Operable Unit 6-05

Physical Description. Operable Unit 6-05 is the comprehensive Remedial Investigation/Feasibility Study for WAG 6 and will be incorporated into the overall sitewide Remedial Investigation/Feasibility Study to be performed for WAG 10.

FFA/CO Planned Activities and

Assumptions. Results from Tracks 1 and 2 Operable Units that require further investigation will be performed in this comprehensive Remedial Investigation/Feasibility Study for WAG 6. This Remedial Investigation/Feasibility Study will be accomplished along with the overall INEL Remedial Investigation/Feasibility Study under WAG 10. The Remedial Investigation/Feasibility Study process will require several documents and reviews including public comment on Proposed Plans prior to the determination of action documented in the Record of Decision.

Enforceable Deadlines (combined with Operable Unit 10-04).

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
June 1998

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
November 1998

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
July 2000

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
May 2001

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 6 are shown in Figure 5-11; funding for WAG 6 is presented in Table 5-6.

LF92 0079

Figure 5-11. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 6.

Dollars in Thousands

ER Program	FY 1992	FY 1993
WAG 6	564	1,303

Table 5-6. Funding for Waste Area Group 6.

WASTE AREA GROUP 7: RADIOACTIVE WASTE MANAGEMENT COMPLEX

Waste Area Group 7 encompasses the Radioactive Waste Management Complex (RWMC) (see Figure 5-4), which was established in 1952 as a controlled area for disposal of solid radioactive wastes generated by DOE operations at the INEL and other DOE sites. Fourteen Operable Units have been identified at the RWMC, including the Transuranic Storage Area (TSA) and the Subsurface Disposal Area (SDA). The SDA, which is the location of the largest remediation activity at the INEL, is a confirmed release site. Findings from environmental monitoring activities have determined that migration of transuranic radionuclides has occurred to the 110-foot sedimentary interbed beneath the RWMC. Trace organic compounds have been detected in the Snake River Plain Aquifer, which is located 600 feet below the surface at this location. As part of the WM operations, all INEL generated low-level waste is sent to the RWMC for disposal. This disposal is strictly for low-level waste and is performed using environmentally acceptable methods so as not to add to the current and future environmental cleanup efforts.

Operable Unit 7-01

Physical Description. Operable Unit 7-01 is composed of all soil vaults within the SDA emplaced before or during 1983. The soil vaults are cylindrical holes drilled into the ground for disposal of waste. The suspected contaminants in the soil vaults include radioactive and, possibly, nonradioactive hazardous substances.

FFA/CO Planned Activities and

Assumptions. The Track 2 investigation will lead to a No Further Action determination, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is assumed that investigations will require further analysis under Operable Unit 7-13 for the SDA Remedial Investigation/Feasibility Study and require stabilization and capping.

Operable Unit 7-02

Physical Description. Operable Unit 7-02 is an inactive acid disposal pit located centrally within

the SDA. The pit extends down to the top of the first basalt layer. The contaminants in the acid pit include radioactive and nonradioactive hazardous substances.

FFA/CO Planned Activities and

Assumptions. The Track 2 investigation is completed. Preliminary Track 2 results suggest that No Further Action is necessary for the acid pit. Should further action be required, the action would be consolidated with the Operable Unit 7-13 Comprehensive RI/FS.

Operable Unit 7-03

Physical Description. Operable Unit 7-03 is defined as the pits, trenches, and areas affected by potential contaminant migration at the SDA. These pits and trenches, which extend down to the first basalt layer, do not contain transuranic contaminated wastes. The suspected contaminants include radioactive and nonradioactive hazardous substances.

FFA/CO Planned Activities and

Assumptions. Operable Unit 7-03 will be initially investigated as Track 1, and a report will be prepared to recommend a decision regarding further action for specific pits and trenches or groups of pits and trenches. The pits, trenches, and adjacent soils recommended for further characterization as Track 2 will be sampled and evaluated for possible contaminant migration. It is anticipated that certain pits and trenches may be identified for Interim Action after the Track 1 investigation. The Interim Action for these pits and trenches may include retrieval, treatment, and disposal. Stabilization and capping are the general response actions assumed for the remaining pits and trenches to mitigate release of contaminants to the environment. The final remedial action will be performed under Operable Unit 7-13.

Operable Unit 7-04

Physical Description. Operable Unit 7-04 is described as the air surrounding the RWMC. The potential contaminants in this Operable Unit include radioactive and nonradioactive hazardous substances from the RWMC.

FFA/CO Planned Activities and

Assumptions. A Track 2 investigation to establish a baseline for other Operable Unit analyses will be performed. It is assumed that the findings will justify No Further Action for the Operable Unit.

Operable Unit 7-05

Physical Description. Operable Unit 7-05 is the surface water pathway including surficial sediments that may have been contaminated by surface water runoff from the RWMC. The contaminants in this Operable Unit include radioactive substances.

FFA/CO Planned Activities and

Assumptions. It is expected that the findings will lead to a No Further Action recommendation. A Track 2 investigation has been completed.

Operable Unit 7-06

Physical Description. Operable Unit 7-06 is composed of all groundwater beneath the RWMC and vicinity, including all water in the subsurface fracture zones, intermediate sedimentary beds, perched water, and the Snake River Plain Aquifer. The suspected contaminants include radioactive and nonradioactive hazardous substances.

FFA/CO Planned Activities and

Assumptions. Track 2 investigations are underway to determine whether No Further Action is warranted. It is expected that the findings will lead to a recommendation for no remedial action for this Operable Unit. These investigations will aid in the completion of the RWMC Remedial Investigation/Feasibility Study activities.

Operable Unit 7-07

Physical Description. Operable Unit 7-07 is described as the non-volatile organic compound contamination within the unsaturated subsurface region beneath the RWMC. The vadose zone is described as the subsurface region from ground surface down to the top of the Snake River Plain Aquifer. The potential contaminants in this Operable Unit include radioactive and other non-volatile organic compound hazardous substances.

FFA/CO Planned Activities and

Assumptions. A Track 2 investigation will be conducted to determine whether further action will be required for the Operable Unit. The investigation will focus on sampling and evaluation of non-organic contamination in the vadose zone. While it is anticipated that a No Further Action determination will be made, any action required will be performed under Operable Unit 7-13, the SDA Remedial Investigation/Feasibility Study.

Operable Unit 7-08

Physical Description. Operable Unit 7-08 is described as the Volatile Organic Compounds (VOCs) in the vadose zone (the subsurface region from ground surface down to the top of the Snake River Plain Aquifer) beneath and within the immediate vicinity of RWMC.

FFA/CO Planned Activities and

Assumptions. This Operable Unit assumes a Remedial Investigation/Feasibility Study will be required. It further assumes that remedial actions will be required to mitigate release of VOCs to the aquifer. A treatability study is being undertaken to develop a process and attendant cost data for site-specific vapor vacuum extraction technology.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
August 1991

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
January 1992

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
September 1993

Draft Record of Decision
submitted to the state and EPA for review
July 1994

Major Accomplishments To Date.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
August 1991

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review January 1992

Operable Unit 7-09

Physical Description. Operable Unit 7-09 is defined as any contaminant release from the Transuranic Storage Area (TSA), a 57-acre area at the RWMC. The waste stored in the TSA is regulated by RCRA and is not subject to CERCLA remediation.

FFA/CO Planned Activities and

Assumptions. A Track 1 investigation will be preformed to determine whether further action under CERCLA is warranted. It is expected that the result of these investigations will be a No Further Action determination.

Operable Unit 7-10

Physical Description. Operable Unit 7-10 is an inactive disposal pit, Pit 9, located in the northeastern corner of the SDA. The waste within Pit 9 is primarily transuranic and hazardous wastes generated at the Rocky Flats Plant, and additional waste from waste generators at the INEL. The waste consists of drums of sludge, drums of assorted solid waste, cardboard boxes containing empty drums, an inactive reactor vessel, and other large contaminated metal objects.

FFA/CO Planned Activities and

Assumptions. Pit 9 is being remediated as an Interim Action. This Interim Action will reduce the potential spread of contamination from Pit 9. Several remedial cleanup alternatives, including the preferred alternative (physical separation, chemical separation, and stabilization), have been evaluated in a Proposed Plan for the Interim Action. The alternatives were presented to the public as required by the FFA/CO. Proof-of-process testing will be performed for the proposed remediation technologies that meet the general requirements of the preferred alternative. Results of the proof-of-process testing will be used to aid in selection of the final remedial action for this Operable Unit.

Enforceable Deadlines.

Draft Interim Action Record of Decision submitted to the state and EPA for review June 1992

Operable Unit 7-11

Physical Description. Operable Unit 7-11 consists of three active septic tank systems at the RWMC.

FFA/CO Planned Activities and

Assumptions. A Track 1 investigation has been completed for this Operable Unit. It is expected that the final result of this investigation will lead to a No Further Action determination.

Operable Unit 7-12

Physical Description. Operable Unit 7-12, known as Pad A, is an asphalt pad at the SDA built because near-surface basalt was unsuitable for subsurface disposal. The pad consists of asphalt laid over a gravel base. Plywood boxes and metal drums containing mixed waste were stacked on the pad, covered with plywood/polyethylene, and finally covered with soil and seeded with crested wheatgrass to reduce soil erosion. The waste primarily consists of nitrates, salts, uranium, and transuranic nuclides.

FFA/CO Planned Activities and

Assumptions. This Operable Unit is being separately treated as a Remedial Investigation/Feasibility Study to mitigate the potential of contamination. Treatability studies will be performed to determine the best method for remediation.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study Scope of Work submitted to the state and EPA for review May 1991

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review December 1992

Draft Remedial Investigation/Feasibility Study Record of Decision submitted to the state and EPA for review October 1993

Major Accomplishments To Date.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
May 1991

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
December 1991

Operable Unit 7-13

Physical Description. Operable Unit 7-13 is defined as the pits and trenches containing transuranic-contaminated waste at the SDA. These wastes include transuranic, low-level, and mixed waste in solid and liquid form. Soils around or beneath the pits and trenches contaminated by transuranic and hazardous wastes are also included in this Operable Unit.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated in several phases. A preliminary scoping study and Track 2 investigation will be performed to evaluate the exposure potential. The Operable Unit will then be investigated as a Remedial Investigation/Feasibility Study process. It is assumed the decision process will specify remedial action for some or all of the pits and trenches to mitigate release of contaminants to the environment. The remedial actions may include retrieval, treatment, and disposal for waste from transuranic contaminated pits, trenches, and soils, followed by stabilization and capping.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
August 1995

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
January 1996

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
September 1997

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
July 1998

Operable Unit 7-14

Physical Description. Operable Unit 7-14 is the comprehensive Remedial Investigation/Feasibility Study for WAG 7 and will incorporate the cumulative impact of individual hazards associated with each Operable Unit at the RWMC.

FFA/CO Planned Activities and

Assumptions. This is the comprehensive Remedial Investigation/Feasibility Study for the entire RWMC. Input from all Operable Unit investigations at the RWMC will feed into this Remedial Investigation/Feasibility Study and the cumulative impacts of actions taken for each Operable Unit in WAG 7 will be analyzed. It is anticipated that no further remedial actions will be necessary for this Operable Unit because required actions will have been taken as a result of previous WAG 7 Interim Actions and Remedial Investigation/Feasibility Study activities.

Enforceable Deadlines.

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
July 1996

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
December 1996

Draft Remedial Investigation/Feasibility Study
submitted to the state and EPA for review
August 1998

Draft Remedial Investigation/Feasibility Study
Record of Decision
submitted to the state and EPA for review
June 1999

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 7 are shown in Figure 5-12; funding information for WAG 7 is presented in Table 5-7.

LF92 0080

Figure 5-12. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 7.

Dollars in Thousands		
ER Program	FY 1992	FY 1993
WAG 7	16,919	34,840

Table 5-7. Funding for Waste Area Group 7.

WASTE AREA GROUP 8: NAVAL REACTORS FACILITY

The Naval Reactors Facility (NRF) (see Figure 5-4) is not within the scope of this plan. The FY-1993 SSP covers only those activities funded by the Director of the Office of Environmental Restoration and Waste Management. The NRF, operating under the authority of the joint U.S. Navy-DOE Naval Nuclear Propulsion Program, does not have significant environmental liabilities

present that require special budget plans to ensure adequate funding is available. Historically, the NRF Program has attended to environmental matters as part of its ongoing operations and included the necessary funding in normal operating budgets. Accordingly, participation in this INEL SSP is not needed to ensure adequate remedial funding is available.

WASTE AREA GROUP 9: ARGONNE NATIONAL LABORATORY-WEST

Waste Area Group 9 (see Figure 5-4) is at the Argonne National Engineering Laboratory-West (ANL-W), which is primarily devoted to the testing of breeder-reactor technology. ANL-W sites being investigated include tanks and wastewater handling/disposal systems such as ditches, ponds, pits, and drains. The boundary of WAG 9 is basically the ANL-W fence; however, operations that extended or extend outside of the fence, such as the wastewater ditch, are included. WAG 9 includes all surface and subsurface areas described above. The four Operable Units within this WAG are described below.

Operable Unit 9-01

Physical Description. Operable Unit 9-01 contains 10 sites that include industrial and sanitary lift stations and associated piping, a discharge ditch, a sewage lagoon, a septic tank, a debris pile, and a transformer yard. The waste is expected to be nonhazardous and nonradioactive for all except the transformer yard. Waste from the transformer yard will contain polychlorinated biphenyls (PCBs).

FFA/CO Planned Activities and

Assumptions. Operable Unit 9-01 will be investigated as Track 1. It is assumed that Track 1 findings will warrant No Further Action.

Operable Unit 9-02

Physical Description. Operable Unit 9-02 is the EBR-II leach pit, which contains radioactive contaminants and hazardous contaminants (e.g., heavy metals).

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be

addressed as a Track 2. However, because of the radioactive contamination in the EBR-II leach pit, it is assumed that cleanup will be performed.

Operable Unit 9-03

Physical Description. Operable Unit 9-03 contains three sites: open burn pits where organics are suspected, an industrial/sanitary lift station that has radioactive contaminants, and a fuel oil spill where petroleum products were spilled.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as a Track 2 with sampling and analysis. The Track 2 will end with the development of a scoping summary report recommending a No Further Action determination, an Interim Action process, or Remedial Investigation/Feasibility Study scoping.

Operable Unit 9-04

Physical Description. Operable Unit 9-04 contains five sites, including an industrial waste pond and cooling tower blowdown ditches contaminated with radioactive materials, an interceptor canal contaminated with corrosives, a discharge ditch, and the cooling tower riser pits contaminated with corrosive and radioactive materials. A comprehensive Remedial Investigation/Feasibility Study is being prepared.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as a Remedial Investigation/Feasibility Study. Information and decisions from WAG 9 Track 1 and 2 activities as well as any remediation will be integrated to support the comprehensive Remedial Investigation/Feasibility Study.

WASTE AREA GROUP 10: MISCELLANEOUS FACILITIES

Waste Area Group 10 (see Figure 5-4) includes regional Snake River Plain Aquifer concerns related to the INEL that cannot otherwise be addressed on a WAG-specific basis and other surface disposal sites and ponds identified at the INEL that are not included in other Waste Area Groups. The boundaries of WAG 10 are the INEL boundaries, or beyond, as necessary to encompass real or potential impact from the INEL activities. WAG 10, which includes any areas within the INEL not covered by other Waste Area Groups, consists of 12 specifically identified and two generally identified sites divided into five Operable Units. Specific sites currently recognized as part of WAG 10 include the Liquid Corrosive Chemical Disposal Area located between WAGs 6 and 7, the Organic Moderated Reactor Experiment leach pond located between WAGs 4 and 5, and former ordnance areas (including the old Naval Ordnance Disposal Area) located at numerous sites within the INEL.

Operable Unit 10-01

Physical Description. Operable Unit 10-01 contains the Liquid Corrosive Chemical Disposal Area (LCCDA) Old Disposal Pit and the LCCDA Limestone Treatment and Disposal Pit. The suspected contaminants are mineral acids and bases.

FFA/CO Planned Activities and

Assumptions. Track 2 investigations are being performed to determine either a No Further Action recommendation, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is expected that a No Further Action determination will be made.

Operable Unit 10-02

Physical Description. Operable Unit 10-02 consists of the Organic Moderated Reactor Experiment Leach Pond used for wastewater disposal. Disposal of the water occurred through evaporation and infiltration into the ground. Suspected contaminants are radionuclides, organics, and chemicals.

FFA/CO Planned Activities and

Assumptions. Track 2 investigations are being performed to determine either a No Further Action

recommendation, an Interim Action, or a Remedial Investigation/Feasibility Study and Record of Decision. It is expected that a No Further Action determination will be made.

Operable Unit 10-03

Physical Description. Operable Unit 10-03 consists of areas containing ordnance that have not been inventoried. These areas are poorly defined throughout the INEL and include a bombing range and an area used to test large caliber guns. Suspected contaminants are hazardous chemicals, nonhazardous metals, and unexploded ordnance.

FFA/CO Planned Activities and

Assumptions. This Operable Unit will be investigated as Track 2 with soil sampling being performed. Interim action will be required to perform detonation of unexploded ordnances and soil remediation.

Operable Unit 10-04

Physical Description. Operable Unit 10-04 exists for the overall INEL site investigation, and includes the Snake River Plain Aquifer.

FFA/CO Planned Activities and

Assumptions. A comprehensive Remedial Investigation/Feasibility Study for the INEL site as a whole will be performed. The cumulative impacts of all Waste Area Groups will be considered as part of this Remedial Investigation/Feasibility Study. The data from the comprehensive Remedial Investigation/Feasibility Study from each Waste Area Group will roll into this overall Remedial Investigation/Feasibility Study. Pursuant to this process, all environmental concerns at the INEL will be addressed.

Enforceable Deadlines (combined with Operable Unit 6-04).

Draft Remedial Investigation/Feasibility Study
Scope of Work
submitted to the state and EPA for review
June 1998

Draft Remedial Investigation/Feasibility Study
Work Plan
submitted to the state and EPA for review
November 1998

Draft Remedial Investigation/Feasibility Study submitted to the state and EPA for review
July 2000

Draft Remedial Investigation/Feasibility Study Record of Decision submitted to the state and EPA for review
May 2001

Operable Unit 10-05

Physical Description. Operable Unit 10-05 consists of ordnance areas that have been selected for Interim Action due to their proximity to facilities. These areas are poorly defined throughout the INEL and contain discarded ordnance that has not been inventoried.

FFA/CO Planned Activities and Assumptions. This Operable Unit will be

investigated as an Interim Action. The Interim Action will be required to perform detonation of unexploded ordnances and soil remediation.

Enforceable Deadlines.

Draft Record of Decision submitted to the state and EPA for review
April 1992

Major Accomplishments

Draft Record of Decision submitted to the state and EPA for review
April 1992

The FFA/CO investigation schedule and enforceable milestones for all OUs in WAG 10 are shown in Figure 5-14; funding information for WAG 10 is presented in Table 5-9.

LF92 0082

Figure 5-14. FFA/CO Investigation Schedule and Enforceable Milestones for Waste Area Group 10.

Dollars in Thousands		
ER Program	FY 1992	FY 1993
WAG 10	2,058	5,791

Table 6-9. Funding for Waste Area Group 10.

DECONTAMINATION AND DECOMMISSIONING ACTIVITIES

Decontamination and decommissioning activities primarily address the management of radioactive contaminated facilities to ensure that releases of and exposure to radioactivity and other hazardous materials comply with federal and state standards. The units described in this section are on DOE-ID's Surplus Facilities List and are scheduled to be decommissioned in accordance with DOE regulations. A facility is declared "surplus" if the programmatic sponsor designates it as such and no future programs are identified for the facility. The primary decontamination and decommissioning activities at the INEL are driven by the DOE-ID Surplus Facilities Management Program and the Defense Facility Decommissioning Program schedules for cleaning up contaminated surplus facilities. Decontamination and decommissioning projects meet DOE Order 5820.2A Chapter V requirements.

Decontamination and decommissioning planning for each excess facility includes assignment of a priority; radiological, chemical, and physical characterization; and decision analysis to select the preferred decontamination and decommissioning alternatives. Although all activities will be accomplished by the responsible organization, management and surveillance of all units will be performed by EG&G Idaho.

Through 1990, 23 facilities had been identified for decontamination and decommissioning including several that have been returned to a natural condition (all evidence of the facility has been removed). The remainder have had all contamination removed and the useful parts of the facilities returned to further service. By the end of FY 1992, decontamination and decommissioning will be complete at the Special Power Excursion Test-IV facility, leaving 49 facilities awaiting decontamination and decommissioning.

Army Re-Entry Vehicle Facility Site

Physical Description. The Army Re-Entry Vehicle Facility Site (ARVFS) consisted of an earth-covered bunker, a test pit, and a lean-to shed covering the test pit. The test pit was contaminated

with low-level beta-gamma radioactivity.

Decontamination and decommissioning operations removed the test pit and lean-to shed in 1989.

Treatment alternatives to dispose of the waste are currently being studied. The bunker contains four drums of RCRA-regulated mixed waste with radioactively contaminated sodium-potassium liquid metal, which is considered hazardous because it is reactive. This liquid metal is the primary coolant removed from EBR-I. A process will be developed to chemically treat the contaminated liquid metal. Decontamination and decommissioning on any contaminated process equipment and the bunker will be performed to return the bunker and area to a reusable condition.

Technical Approach and Assumptions.

Chemical treatment of the mixed waste (sodium-potassium liquid metal) to make it a radioactive-only waste is being studied.

Auxiliary Reactor Areas II and III

Physical Description. Auxiliary Reactor Area II (ARA-II) housed the Stationary Low Power Reactor No. 1, which was operated by the Army between August 1958 and December 1961. The reactor was destroyed in a reactor accident that occurred during maintenance operations on January 3, 1961. A thorough evaluation of the contamination was performed shortly after the accident and a full cleanup effort was initiated. After cleanup of the area was completed, the three main buildings were converted into offices and welding shops. Since the removal of the welding qualification shop in 1987, the facilities have not been used. Decontamination and decommissioning of this facility includes totally dismantling existing buildings and structures at the ARA-II facility and removing all area utilities. In addition, contaminated soil areas that exist both inside and outside the security fences will be cleaned up or covered with clean soil according to the criteria for releasing contaminated soil areas at the INEL.

The ARA-III facility was used between 1960 and 1965 to test gas-cooled reactors for the Army. After 1966, the facility served as a laboratory for component and instrument testing. The facility has not been used since 1987. Decontamination and decommissioning of the ARA-III facility includes removing the exhaust stack, associated piping, the hot-waste tank and lines, concrete, and

miscellaneous items in the reactor buildings. In addition, contaminated soil areas will be cleaned up as required by INEL release criteria. Once this is complete, the facility will be released for unrestricted use. All the buildings except one will be made available for reuse.

Technical Approach and Assumptions.

Characterization of the ARA-II and ARA-III facilities and remaining underground storage tanks has been performed resulting in the update of the characterization and decision analysis report. Decontamination and decommissioning of the equipment associated with the Stationary Low-Power Reactor No.1 will occur. Decontamination and decommissioning of the ARA-II buildings, structures, underground lines, utility poles, and septic systems has been initiated. Excavation, removal, and disposal of three ARA-III tanks will also occur.

Water Reactor Research Test Facility

Physical Description. The Water Reactor Research Test Facility, located in the vicinity of Test Area North contains a liquid waste tank that is radioactively contaminated. The contents of the liquid waste tank will be characterized for radiological and hazardous waste content, a decision analysis will be performed regarding the remedial action, and a project plan will be initiated. Decontamination and decommissioning includes removing and disposing the tank contents followed by removal and disposal of the waste tank, associated piping, and any other contaminated waste generated during removal operations.

Technical Approach and Assumptions. In FY 1993, the following activities will be accomplished: characterization of the tank; completion of a decision analysis; initiation of the project plan; and removal and disposition of the tank and associated drain line.

Auxiliary Reactor Area I

Physical Description. Auxiliary Reactor Area I (ARA-I) was constructed in the late 1950s as a support facility for the other ARA facilities. The facilities were used to support other INEL programs and facilities until the spring of 1988. Decontamination and decommissioning includes

dismantling Building ARA-626, the hot cells, Building ARA-627, the septic systems, and all other structures.

Technical Approach and Assumptions.

Characterization of the facilities will occur in FY 1993 and the characterization and decision analysis report will be completed. A conceptual design of the cleanup activities will be conducted. Buildings ARA-626 and ARA-627, the hot cells, septic systems, and all other structures will be restored to their original state.

Materials Test Reactor

Physical Description. The Materials Test Reactor (MTR), located at the Test Reactor Area complex, is on DOE-ID's Surplus Facilities List. MTR was a 40-megawatt light water reactor that operated between 1952 and 1970. The MTR area contains more than 15 buildings and structures. A major portion of the facility has been decontaminated and is being used for other INEL programs. The reactor vessel is still in place, and all coolant has been drained. Auxiliary portable shielding has been placed on the reactor vessel closure to reduce external radiation levels to acceptable levels.

Technical Approach and Assumptions.

Characterization and preparation of the overall MTR project planning schedule will occur in FY 1994.

Central Facilities Area Hot Laundry

Physical Description. Building CFA-669 was formerly used as a laundry facility for both radioactive and nonradioactive contaminated clothing. Decontamination and decommissioning includes dismantling CFA-669 and disposing all waste generated.

Technical Approach and Assumptions. The final characterization and decision analysis report was issued and the conceptual design for cleanup will be formulated.

Engineering Test Reactor

Physical Description. The Engineering Test Reactor (ETR) was a pressurized light water test reactor at the Test Reactor Area that was operated

between 1957 and 1982. Late in the life of the facility, the Sodium Loop Safety Facility was operated as part of the test program. A significant amount of highly radioactive contamination will have to be removed. Techniques for decontamination and decommissioning have yet to be determined.

Technical Approach and Assumptions. The characterization report will be updated in FY 1994. National Environmental Protection Agency documentation will be submitted.

Boiling Water Reactor Experiment-V

Physical Description. The BORAX-V building housed four separate experimental reactors, BORAX II, III, IV, and V, which operated between 1953 and 1964. The facilities have not been used since 1964. Decontamination and decommissioning activities were conducted in FYs 1979, 1984–1987, and FY 1989–1992. Decontamination and decommissioning activities include total dismantlement, removal, and disposal of the equipment and buildings. The foundations of the Turbine Building were decontaminated, demolished to below grade, and left in place. The three underground storage tanks were removed and disposed of under the Underground Storage Tank Program. The raw water system, electrical substation, and security fence will be removed and disposed of when decontamination and decommissioning of the reactor building is completed. The site will be restored and seeded with native grasses and will be available for reuse.

Technical Approach and Assumptions. Reactor building decontamination and decommissioning activities will be initiated and completed by October 1994.

Special Power Excursion Reactor Test No. 4

Physical Description. The Special Power Excursion Test-IV reactor was built and operated as part of the Atomic Energy Commission's Reactor Safety Program. This facility was constructed in 1960 to provide a prototype for safety tests of swimming pool type reactors. The reactor started operation in 1961 and was placed in standby condition in 1970. This project will remove and dispose the mixed waste contents of a holdup tank,

dismantle and remove the tank and associated piping, remove and dispose the contaminated soil, recycle noncontaminated piping, backfill the trenches, and recontour and revegetate the area.

Technical Approach and Assumptions. Decontamination and decommissioning operations will be completed in FY 1993. Postdecontamination and postdecommissioning documentation for the waste holdup tank and piping will be prepared. In FY 1993, a final decontamination and decommissioning report will be issued.

Loss-of-Fluid Test Facility

Physical Description. The Loss-of-Fluid Test (LOFT) reactor was part of a mobile test assembly mounted on a railroad flatcar. It was used to perform loss-of-coolant experiments that simulated reactor accidents. These tests were performed during the 1970s. This decontamination and decommissioning activity will dispose ancillary equipment remaining from the LOFT program. This facility is on DOE-ID's Surplus Facilities List.

Technical Approach and Assumptions. Radiological characterization and the characterization and decision analysis report has been. The decontamination and decommissioning plan, final report, and remedial action of ancillary equipment wastes were initiated and completed in FY 1992.

Test Area North 607 Decontamination Shop

Physical Description. The TAN-607 Decontamination Shop was used for radiological decontamination of tools and small equipment from the INEL and non-INEL facilities. This area began operations in 1957 and was shut down in 1987. An application for inclusion on the decontamination and decommissioning inventory was submitted in FY 1990. Recommended decontamination and decommissioning for this site includes the removal of all contaminated equipment, including tanks and piping, and decontamination of the space within the larger TAN-607 facility to allow reuse of the area.

Technical Approach and Assumptions. No activity is planned for FY 1993.

Test Train Assembly Facility

Physical Description. The Test Train Assembly Facility, in the Materials Test Reactor basement at the Test Reactor Area, was used in support of the Thermal Fuels Behavior Program to build and disassemble nuclear fuel tested at the Power Burst Facility reactor. Decontamination and decommissioning operations will remove stored nuclear fuel, remove radioactively contaminated water, and clean up residual radioactive contamination from the canal walls, floor, and equipment. The facility will be repaired to a stable condition when the dismantlement efforts are completed.

Technical Approach and Assumptions. In FY 1994, characterization and engineering of the decision analysis, and project planning and equipment specification will be performed.

Idaho Chemical Processing Plant

Physical Description. While still an active facility, several areas at the Idaho Chemical Processing Plant are on DOE-ID's Surplus Facilities List. These facilities include:

- The Waste Calcining Facility, which was originally constructed as a technology demonstration facility and was used to calcine high-level liquid waste until the New Waste Calcining Facility was constructed. Use of this facility has been discontinued.
- ICPP-603 Fuel Storage Facility, which was the primary fuel storage facility from the early 1950s until completion of the ICPP-666 Fuel Storage Basin in 1985. While some fuel currently remains in the basins, this facility is being phased out and will be decontaminated and decommissioned in the 1990s.
- ICPP-640 Headend Processing Facility, which previously housed stainless steel and graphite fuel processing headend facilities. These processing facilities are no longer needed.
- ICPP-709 and ICPP-734 Service Waste Monitoring facilities, which were used for many years to monitor the service waste stream being discharged to the injection well and later the percolation ponds. These facilities have been replaced with updated facilities and equipment

and are scheduled for decontamination and decommissioning activities.

- ICPP-601 and ICPP-631 Fuel Processing Complex, which is still in limited use. This facility has been in continuous operation since the early 1950s and is scheduled to be shut down. Shutdown and decontamination and decommissioning of this facility will be conducted in phases.
- The high-level liquid waste Tank Farm, which is currently in use but is scheduled for replacement by the High-Level Waste Tank Farm Replacement Project (if determined necessary in FY 1993). The first phase of this project may replace five of the 11 old tanks by FY 1997.

Technical Approach and Assumptions. The technical approach and assumptions have not yet been determined.

ANL-W Liquid Waste Processing Area

Physical Description. The decontamination and decommissioning activities at Argonne National Laboratory-West involve the decontamination and decommissioning of the Central Liquid Processing Area in the Laboratory Office Building. The Central Liquid Processing Area has been declared excess and requires decontamination and decommissioning.

Technical Approach and Assumptions. Preliminary radiological and hazardous characterization will be performed in FY 1993 and National Environmental Policy Act documentation will be submitted in FY 1993 for this decontamination and decommissioning activity.

TAN Technical Support Facilities

Physical Description. The Technical Support Facilities consist of buildings, structures, pits, and equipment used to support various INEL programs at Test Area North. The decontamination and decommissioning cannot be started until all identified use of the Liquid Waste Treatment Facility has been discontinued. Recommended decontamination and decommissioning for this unit includes partial dismantlement of TAN-616, removal of contaminated tanks and soil, and backfill and seed excavations.

Technical Approach and Assumptions. The technical approach and assumptions have not yet been determined.

UNDERGROUND STORAGE TANK PROGRAM

Physical Description. The INEL Tank Management Program includes oversight of all the INEL tanks and management of EG&G Idaho and WINCO tanks. The INEL tanks have been profiled and categorized according to 40 CFR 280. The following tank classes were identified and a technical approach, priority, and schedule were developed for each tank category:

- Active regulated tank systems nondeferred (gas/diesel) and deferred (emergency generator)
- Active nonregulated tank systems (heating fuel)
- Abandoned/out-of-service petroleum tank systems
- Abandoned/out-of-service hazardous/radioactive tank systems.

Technical Approach and Assumptions. Using the four categories, a systematic technical approach is in progress to remove, replace, or upgrade the INEL tanks.

Active tank replacements started in 1991. Three tanks have been upgraded and seven tank replacements are scheduled. The tank replacement will exceed 40 CFR 280 standards in that all tanks will be replaced with double-wall tanks fitted with

interstitial monitoring and auto-tank gauging. In 1993, six more active tanks will be replaced. The tanks replaced in 1991 and 1993 fall into the active regulated nondeferred classification because these tanks are specifically driven by the 40 CFR 280 regulations. In 1994, 13 active regulated deferred tanks will be replaced. In 1994, seven active non-regulated tanks will be replaced. The non-regulated tanks will be upgraded to exceed the regulations as well.

In addition to the tank removal and replacement program, a tank tightness program was initiated in 1989 with 16 tanks being tested that year. Tanks that did not pass this test were removed. Two tanks were tested in 1990 to ensure compliance; both tanks passed. Inventory control is performed on a daily basis by the area tank landlord and tank reconciliation forms are submitted to the Tank Management Program on a monthly basis to ensure these checks are being made.

Funding information for Decontamination and Decommissioning and the Underground Storage Tank programs is presented in Table 5-10.

Dollars in Thousands		
ER Program	FY 1992	FY 1993
D&D/UST	6,009	5,915

Table 5-10. Funding for Decontamination and Decommissioning and Underground Storage Tank Programs.

CHAPTER 6

WASTE MANAGEMENT

WASTE MANAGEMENT

INTRODUCTION

The mission of Waste Management (WM), as outlined in DOE's Environmental Restoration and Waste Management Five-Year Plan is to treat, store, and dispose of DOE waste to protect human health, safety, and the environment. WM at DOE-ID is primarily concerned with the treatment, storage, and disposal of wastes generated at the INEL. In addition, DOE-ID has established a goal to achieve a realistic reduction in the total amount of waste generated at the INEL. This overview of WM activities and plans includes:

- A discussion of the responsibilities of DOE-ID contractors engaged in WM activities at the INEL;
- A summary of waste generation, treatment, storage, and disposal activities for each waste stream;
- A discussion of activities related to continuity of operations at the INEL; and
- A summary of environmental monitoring activities at the INEL.

Many laws and DOE Orders affect WM at the INEL, including the Resource Conservation and Recovery Act (RCRA), the Atomic Energy Act, the Clean Water Act (CWA), the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), the Toxic Substance Control Act (TSCA), and DOE's own standards for the handling and disposal of radioactive wastes. DOE-ID's compliance with all applicable federal regulations and state and local statutes help ensure the protection of human health and the environment. Specific regulations,

agreements, and DOE directives are satisfied by the plans in each Activity Data Sheet (see Appendix C). The NEPA documentation and schedule anticipated for each Activity Data Sheet is listed in Appendix E.

To control generation of waste and efficiently manage wastes generated, the following activities will be incorporated into all aspects of WM:

- Increased emphasis on the minimization, recycling, and ultimate elimination of waste generation, particularly generation of mixed waste;
- Treatment of waste to reduce volume and increase stability; and
- Disposal of wastes in facilities meeting current requirements.

DOE-ID will make every effort to prevent waste of any type from accumulating at treatment or storage facilities without detailed plans for its ultimate treatment and disposal. To ensure efficient and safe operations, DOE-ID must also maintain and upgrade WM facilities as needed.

The goal of WM is to centrally manage wastes generated by operations and remedial actions at specified INEL locations. These locations are not intended for public use and will be managed with the intent of restricting land-use indefinitely. The intent of land use at the INEL is to maximize the amount of INEL property that is clean and available for public use if such a need develops in the future.

WASTE MANAGEMENT ROADMAP

Roadmaps for WM operations at the INEL have been developed. The INEL WM Roadmap process follows the approved roadmapping methodology issued by DOE-Headquarters and promulgated in the Roadmap Methodology Document dated May 15, 1991.

The mission of the WM Roadmap is to provide DOE with a formal, long term, life-cycle planning process through which Environmental Restoration (ER) and WM activities and plans at the INEL are analyzed and executed. The WM Roadmap focuses on the identification and resolution of issues while maintaining compliance with current laws, regulations, and orders.

The roadmap will serve as a basis for identifying technology needs, crosscutting program requirements, and developing future DOE Five-Year Plans. This information also will provide the basis for integrated long-range planning of cleanup and WM activities at the INEL. Ultimately, issues identified in the roadmapping process are built into planning activities and, where appropriate, incorporated into Activity Data Sheets for resolution.

Key issues, assumptions, and potential resolutions identified and roadmapped in the WM Roadmap include all waste streams, especially low-level and low-level mixed waste, hazardous waste, municipal sanitary waste, high-level mixed waste, and spent fuel, and the land disposal restrictions roadmap.

Issues Identified

All Waste Streams.

- Effective WM practices and compliance with waste minimization requirements cannot be accomplished without establishing radiological below-regulatory-concern/de-minimis values.
- Final waste-form requirements for disposal have not been established for low-level mixed waste, transuranic waste, and spent fuel.
- Repositories for transuranic waste and spent fuel have not been approved; thus, the INEL

must provide interim long-term storage pending identification of disposal alternatives.

- No systems approach to manage radiological waste nationwide has been established that considers the entire life-cycle of generation, waste minimization, treatment, storage, and disposal.
- DOE system performance studies do not drive decision-making at either the site or the national level.
- No national policy and implementation plan exists to standardize waste characterization methodology among DOE sites.

Municipal Sanitary Waste.

- The current disposal landfill at the INEL is nearing capacity; alternative storage/disposal at the INEL will be required.
- Materials are disposed of that could be recycled. The INEL needs to achieve full implementation of sanitary waste recycling.
- On-site versus off-site municipal sanitary disposal must be evaluated. The creation of a Subtitle D Municipal Sanitary Waste Landfill on the INEL must be considered.
- More cost-effective operation of facilities in compliance with applicable regulations must be attained.
- Full implementation of a waste avoidance/material substitution program must be achieved.
- Current disposal methods must be modified to extend the life of the INEL landfill.

Hazardous Waste.

- The current storage facility for hazardous waste generated at the INEL has inadequate capacity.
- Off-site disposal/treatment has potential for future liability. DOE is a potentially responsible party for future Superfund sites. On-site versus off-site hazardous waste treatment and disposal options must be evaluated along with the associated liabilities.
- Potential recycling of waste materials is a high priority.

Low-Level Waste/Low-Level Mixed Waste.

- Low-level mixed waste treatment capability and capacity at the INEL is not adequate to meet RCRA treatment and disposal requirements.
- More site-specific data is needed to validate performance assessment models for low-level waste disposal.
- Lack of coordination on the national level inhibits low-level/low-level mixed waste treatment utilization.

High-Level Mixed Waste.

- Land Disposal Restrictions storage prohibitions must be resolved for high-level liquid waste and calcine.

Spent Fuel.

- No disposition has been scheduled for the large inventory of spent fuel.
- The current storage configuration is inadequate for long-term custodial care.

Land Disposal Restriction Waste.

- Adequate treatment technologies have not been developed or implemented for all INEL waste streams.
- Current milestones for treatment of mixed waste will not support compliance.
- The policy for integration of RCRA technical requirements with respect to CERCLA activities has not been implemented.
- Closure requirements have not been defined and integrated.

Efforts to resolve the issues identified above are under way.

WASTE MANAGEMENT RESPONSIBILITIES

All the INEL contractors are responsible for some segments of WM, either as waste generators or as managers of waste treatment, storage, and disposal facilities. The contractors work together to effectively manage radioactive, hazardous, mixed, and solid wastes generated or residing at the INEL.

EG&G Idaho

EG&G Idaho's mission is to plan, develop, and operate facilities and projects for the safe and cost-effective management of radioactive, mixed, hazardous, and solid wastes. The EG&G Idaho WM Program also provides technology transfer and consultation to DOE-ID and other agencies in support of WM activities elsewhere.

Major WM activities conducted by EG&G Idaho include

- Operation of the Radioactive Waste Management Complex (RWMC) for disposal of low-level waste and interim storage of transuranic waste.
- Operation of the Stored Waste Examination Pilot Plant (SWEPP) to support the retrieval and certification of the INEL-stored transuranic waste for ultimate shipment to the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.
- Operation of the Waste Experimental Reduction Facility (WERF) for production-scale sizing, solidification, compaction, and incineration of low-level waste and low-level mixed waste to establish improved and additional treatment methods for such waste.
- Development of improved and additional treatment and minimization processes for low-level, hazardous, and mixed wastes to enhance pollution prevention and waste avoidance.
- Conduct of environmental monitoring at the RWMC and other EG&G Idaho WM facilities.
- Operation of DOE-ID waste information systems covering the quantities and characteristics of the various wastes generated at the INEL.
- Assistance with the development of a national low-level WM system and with federal, state, and local organizations implementing this system.
- Development of new facilities for the management of DOE-ID waste such as:
 - Waste Characterization and Storage Facility for storage of transuranic waste retrieved from earlier storage configurations;

- Idaho Waste Processing Facility for treatment of transuranic, mixed, or orphaned wastes to render them acceptable for disposal;
 - New Low-Level Waste Treatment and Disposal System for storage, minimization, disposal, treatment, and stabilization of low-level waste; and
 - Retrieval Enclosure Facility for safe containment of retrieval operations for earth-covered transuranic waste.
- Establish waste type managers responsible for integrating activities; the waste type managers will act as a focal point for identifying and resolving issues.
 - Management of hazardous and mixed wastes generated at DOE-ID facilities and assistance with DOE-ID in coordinating the INEL management of mixed waste.
 - Operation of the INEL municipal landfill.
 - Maintenance of facilities (hot cells, warm shop, fuel storage pads, etc.) that perform research on irradiated materials.
 - Storage and maintenance of the Three Mile Island debris and other spent fuel housed in the Test Area North water pool and placement into dry cask storage.
- Operation of the Radioactive Liquid Waste Tank Farm.
 - Operation of the New Waste Calcining Facility (NWCF).
 - Operation of radioactive waste calcine solid storage facilities.
 - Operation of research facilities to improve the radioactive liquid waste calcination process and to develop new, non-calcination disposal technologies for such waste.
 - Process development, design, construction, and operation of a glass-ceramic process facility for immobilization of calcine to a durable glass-ceramic waste form for disposal in a federal repository.
 - Process development, design, construction and operation of a fuel conditioning/packaging facility for repository disposal of spent nuclear fuels.
 - Conduct of research aimed at the development and implementation of process modification that will result in decreased waste generation at the ICPP.
 - Maintenance of spent nuclear fuel storage at the ICPP.
 - Operation of facilities and completion of construction projects in a manner that protects the environment and the safety of the public and ICPP employees, and complies with environmental laws and regulations.

Westinghouse Idaho Nuclear Company, Inc.

Westinghouse Idaho Nuclear Company, Inc. (WINCO) is responsible for conditioning and preparing spent nuclear fuel at the Idaho Chemical Processing Plant (ICPP) for disposal, and for storing and treating the high-level mixed waste generated during ICPP operations. In addition, liquid low-level waste that is not readily solidified at other INEL facilities is shipped to ICPP for processing in the Process Equipment Waste Evaporator. Low-level waste generated at the ICPP is sent to the RWMC for storage and/or disposal. Processable solid low-level waste is sent first to the WERF for volume-reduction, and then to the RWMC for disposal. Major WINCO hazardous liquid mixed WM activities include:

Babcock and Wilcox Idaho, Inc.

Babcock and Wilcox, Inc. (B&W) is responsible for wastes generated at the Specific Manufacturing Capability Facility. As the waste generator, B&W is responsible for ensuring the proper collection, packaging, labeling, and coordination of on-site transportation of radioactive and hazardous wastes from the generator facility to the designated WM facility. It is also the generator's responsibility to ensure that all Waste Acceptance Criteria of the appropriate disposal facility are met.

Westinghouse Electric Corporation

Westinghouse Electric Corporation (WEC) is responsible for wastes generated at the Naval Reactors Facility (NRF). As the waste generator, WEC is responsible for ensuring the proper collection, packaging, labeling, and coordination of

on-site transportation of radioactive and hazardous wastes from the generator facility to the designated WM facility. It is also the generator's responsibility to ensure that all Waste Acceptance Criteria of the appropriate disposal facility are met.

Argonne National Laboratory

Argonne National Laboratory (ANL) is responsible for wastes generated at the ANL-W facility. ANL-W generates solid low-level waste (remote- and contact-handled) that is shipped to the RWMC for storage and/or disposal. Transuranic waste generated at ANL-W is presently stored at ANL-W's Radioactive Scrap and Waste Facility (RSWF). Storage of transuranic waste at the RSWF is temporary pending (nonconditional) approval of ANL-W's Remote-Handled Transuranic Waste Certification Plan by the WIPP Waste Acceptance Criteria committee. Upon approval, transuranic waste will be shipped to the RWMC for storage until shipment to WIPP for disposal.

Mixed waste at ANL-W is generated in small quantities and stored in two storage areas. Contact-handled mixed waste, other than sodium-contaminated waste, is shipped to the EG&G-operated Mixed Waste Storage Facility. Sodium-contaminated mixed waste is stored at ANL-W's Radioactive Sodium Storage Facility. Remote-handled mixed waste (sodium and non-sodium contaminated) is stored at ANL-W in the Radioactive Scrap and Waste Facility. Hazardous waste is accumulated at the point of origin in satellite accumulation areas prior to shipping to the Hazardous Waste Storage area at the Central Facilities Area.

WASTE GENERATION AND INVENTORY

To understand how waste is managed at the INEL, it is important to know where and how these wastes are generated. This section on waste sources provides a comprehensive breakdown of the types of wastes generated at each facility at the INEL. Additionally, the INEL stores and processes wastes formerly received from off-site locations.

One of the largest sources of waste at the INEL is the decontamination and decommissioning program. Decontamination and decommissioning activities can involve dismantling and demolition of inactive facilities at the INEL. These activities result in large quantities of mostly nonhazardous wastes. Some decontamination and decommissioning wastes, however, may be contaminated with hazardous or radioactive materials and require special handling, treatment, and disposal.

On-Site

Every on-site facility generates some form of waste. Some facilities generate only nonhazardous waste while others generate high-level mixed, low-level, transuranic, and mixed wastes. Table 6-1 identifies the types of waste generated by each facility; the annual volumes of waste generated by INEL operations is set forth in Table 6-2.

Naval Reactors Facility. While the Naval Reactors Facility (NRF) is not under the cognizance of DOE-ID, and is not funded through the Office of ER and WM, it does generate wastes that are managed by DOE-ID. Once these wastes are transferred to DOE-ID for treatment, storage, and disposal, they are included in the waste stream discussions in the SSP. NRF generates solid municipal wastes, low-level waste, and small quantities of hazardous waste. While NRF does not routinely generate transuranic waste, if such waste were to be generated it would also be transferred to DOE-ID. NRF wastes turned over to other INEL activities for disposition are included in the INEL inventories and discussions of each individual waste stream and are handled like any other INEL waste.

Test Reactor Area. The Test Reactor Area (TRA) consists of the Advanced Test Reactor, supporting laboratories, and hot cell facilities to study reactor fuels, materials, and equipment performance in high-neutron-field experiments. Solid low-level waste is generated and sent to the RWMC for disposal. Processable waste is first sent to WERF for volume-reduction. In addition, small volumes of transuranic waste are generated and sent to the RWMC for storage.

Argonne National Laboratory-West. ANL-W operates the Experimental Breeder Reactor-II, the Transient Reactor Test Facility, the Zero Power Physics Reactor, the Hot Fuel Examination Facility, the Fuel Cycle Facility, the Fuel Manufacturing Facility and laboratory, and an office support complex.

Operations at ANL-W generate small quantities of contact- and remote-handled transuranic waste that is shipped to the RWMC and the ANL-W Radioactive Scrap and Waste Facility, respectively. Solid low-level waste generated at ANL-W facilities is sent to the RWMC for disposal. Processable solid low-level waste is first sent to WERF for volume reduction and then to the RWMC. Sodium-contaminated mixed wastes are stored at ANL-W in interim status RCRA-permitted storage facilities.

The Idaho Department of Environmental Quality is preparing a permit for the Radioactive Scrap and Waste Facility. A major provision of the Radioactive Scrap and Waste Facility Part B Permit Application is the replacement of all existing Radioactive Scrap and Waste Facility liners (either currently in use or designed for future use) with new, cathodically protected liners. The permit application also provides for the transfer of all mixed waste and other material stored at the Radioactive Scrap and Waste Facility from the current liners to new, cathodically protected liners. This effort is being taken because the soil at the Radioactive Scrap and Waste Facility ranges from mildly to moderately corrosive (as defined by the U.S. Bureau of Standards) and some of the liners retrieved have been compromised by corrosion. However, no release of radioactivity or hazardous material has occurred.

Test Area North. Test Area North (TAN) primarily generates low-level waste. The Technical Support Facility is the major waste-generating facility at TAN; it includes a large hot shop, a warm shop, hot cells, and a storage pool for temporary storage of radioactive materials. Solid low-level waste generated at TAN is first sent to

WERF for volume reduction and then to the RWMC for disposal.

Specific Manufacturing Capability. The Specific Manufacturing Capability Facility, which is managed by B&W, generates solid low-level waste that is disposed of at the RWMC. Processable solid low-level waste is first sent to WERF for treatment and then to the RWMC. Liquid low-level waste is sent to the ICPP for processing.

Idaho Chemical Processing Plant. Previously, ICPP's mission was recovery of enriched uranium from spent military and research reactor fuel generated high-level mixed waste. The high-level mixed waste was sent to the tank farm for interim storage prior to calcining into a solid. An inventory of liquid high-level mixed waste remains in the tank farm awaiting solidification into calcine. After solidification, this high-level mixed waste will be stored in stainless steel storage bins contained in concrete vaults. Solid low-level waste is normally first sent to WERF for volume reduction, and then to the RWMC for disposal. A small portion of low-level waste has no potential for volume reduction and is sent directly to the RWMC.

Decontamination and Decommissioning Program. The decontamination and decommissioning program addresses all surplus radioactively contaminated areas, facilities, and equipment under the jurisdiction of EG&G Idaho and WINCO. During decontamination and decommissioning, several types of waste may be generated, depending on the nature of the project and the former mission of the facility being decommissioned and decontaminated.

Off-Site

In 1989, the state of Idaho placed a moratorium on the receipt of transuranic wastes from off-site generators. Unless the moratorium is lifted, DOE-ID will not accept wastes from these generators. As a result of an agreement between DOE-ID and the state of Idaho, ANL-E has been granted permission to return transuranic waste generated at ANL-E as a result of activities associated with the INEL programs.

Generator	Waste Types					
	Low-Level	Transuranic	High-Level	Mixed	Hazardous	Nonhazardous
Idaho Falls Facilities	—	—	—	X	X	X
Central Facilities Area	X	—	—	X	X	X
Test Area North						
Special Manufacturing Capability Facility	X	—	—	X	X	X
Technical Support Facility/Hot Cells Hot Shop	X	—	—	—	—	X
Argonne National Laboratory - West	X	X	—	X	X	X
Idaho Chemical Processing Plant	X	—	X	X	X	X
Test Reactor Area	X	X	—	X	X	X
TRA Hot Cells	X	X	—	X	X	X
Decontamination and Decommissioning Program	X	X	—	X	X	X
Radioactive Waste Management Complex ^a	X	—	—	—	—	X
Stored Waste Experimental Pilot Plant ^a	X	—	—	—	—	X
Waste Experimental Reduction Facility ^a	X	—	—	X	—	X
Naval Reactors Facility	X	—	—	—	X	X

a. Wastes generated at these facilities are a result of treatment or examination of wastes from other generators.

Table 6-1. Waste Types Generated at INEL Facilities.

Company	Waste Type	Volume	
		Cubic Meters	(Cubic Yards)
WINCO	High-Level	4770.0	(6238.9)
	Low-Level	1418.0	(1854.5)
	Mixed	9.0	(11.8)
	Nonhazardous	23,874.0	(31,266.1)
	Hazardous	8.0	(10.5)
EG&G Idaho	Low-Level	1,322.3	(1,729.5)
	Mixed	1,721.6	(2,251.8)
	Nonhazardous	20,066.9	(26,246.5)
	Hazardous	37.1	(48.5)
Argonne (ANL-W)	Low-Level	151.3	(197.9)
	Mixed	14.7	(19.2)
	Nonhazardous	9,644.5	(12,614.5)
	Hazardous	9.1	(12.0)
B&W	Low-Level	227.5	(297.5)
	Nonhazardous	1,782.4	(2,331.3)
	Hazardous	8.0	(10.5)

Note: Table 6-2 lists the 1991 annual waste generation by type rates per contractor. High-level mixed waste, which resulted from fuel reprocessing at the ICPP, is included. The inventory of stored transuranic waste for the INEL is 64,752 cubic meters (84,692 cubic yards), with approximately four cubic meters of annual generation.

Table 6-2. Volume of Waste Generated at the INEL in 1991.

WASTE MINIMIZATION

DOE-ID requires development and implementation of a Waste Minimization and Pollution Prevention Awareness Plan. DOE-ID has issued a policy that gives preference to source reduction, material substitution, and environmentally sound recycling over treatment, control, and disposal of wastes.

It is DOE-ID's policy to conduct its operations in a safe and environmentally sound manner. Protection of the public and the environment is of paramount concern and importance to DOE-ID. To this end, DOE-ID is firmly committed to ensuring incorporation of environmental protection goals in the formulation and implementation of the INEL programs. Accordingly, the INEL has developed a waste minimization policy to reduce the total amount of waste generated and disposed of by using waste minimization and waste treatment.

Waste minimization shall be accomplished according to the following WM hierarchy. First, minimize or eliminate waste through source reduction or material substitution. Second, recycle potential waste materials that cannot be minimized or eliminated. Third, treat all waste that is generated to reduce volume, toxicity, or mobility prior to storage or disposal. Figure 6-1 illustrates the transition in WM priorities at the INEL.

This policy applies to all the INEL waste streams. Waste minimization and pollution prevention will be a prime consideration in research activities; process design; facility upgrade, modernization, design, and operation; and decontamination and decommissioning.

Assumption

Source reduction, waste minimization, volume reduction, and recycling efforts will continue to be a high priority in program formulation and execution.

Figure 6-1. Waste Management Priorities at the INEL.

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Management Commitment Statement

DOE-ID and contractor management are committed to minimizing the generation of waste by giving preference to source reduction and to environmentally sound recycling as opposed to treatment, control, and disposal of such wastes. This commitment is demonstrated by the dedication of resources to the development and implementation of waste minimization goals and plans covering all operations. Top management will take appropriate action to provide adequate personnel, budget, training, and materials on a continual basis to ensure that the objectives of the Waste Minimization and Pollution Prevention Program are met.

DOE-ID published the first INEL Waste Minimization Plan on May 9, 1990. The document, which is updated annually, allows for specific methodology and definition of lines of responsibility for all levels of management that will implement the Waste Minimization and Pollution Prevention Program.

Program Goal

The primary goal of INEL's Waste Minimization and Pollution Prevention Program is to implement the program through management accountability, the personal commitment of individual employees, and the development of performance-

measurement systems that will establish and monitor progress toward reduction goals for each waste stream.

A second goal is to use the INEL resources and expertise through technology transfer to state and local governments to assist in waste minimization efforts.

Specific Objectives

Specific objectives of the DOE-ID Waste Minimization and Pollution Prevention Program are to:

1. Meet or exceed applicable requirements in the INEL Waste Minimization Plans.
2. Obtain management commitment to waste minimization activities.
3. Ensure waste minimization practices are a prime consideration in daily INEL operations.
4. Achieve a realistic reduction in the total generation of waste as approved by DOE-ID.
5. Ensure waste minimization/management issues are evaluated before approving new facilities or programs, including remediation and decontamination and decommissioning.

6. Participate in technology transfer to ensure DOE-ID facilities are implementing the most effective waste minimization and pollution prevention technologies, policies, and procedures.

Current Waste Minimization Activities

Industrial and Municipal Waste Recycling. At the INEL, 315,650 kilograms of office wastes and 3,090 kilograms of metal scrap (excluding aluminum cans) were recycled through 1991. Approximately 75,900 liters of waste oil and excess fuel are recycled annually.

Hazardous Waste Reduction and Recycling. Hazardous waste disposal has decreased through source reduction and recycling. Product substitution, improved housekeeping, and material control have reduced hazardous waste generation by more than 100,000 kilograms since 1989.

Solvent substitution in vehicle maintenance and instrument repair shops reduced total INEL solvent waste generation by 46 percent from 32,591 kilograms in 1990 to 17,637 kilograms in 1991. Hazardous paint wastes were reduced by 1,054 kilograms compared with 1990 waste generation rates through nonhazardous product substitution.

Mercury contaminated debris has been reduced substantially since 1989, when more than 90,000 kilograms were shipped for disposal. Through improved housekeeping, spill prevention, and waste segregation, disposal rates for mercury contaminated debris were reduced to 6,300 kilograms in 1990 and 5,900 kilograms in 1991.

Through Material Exchanged, 1,222 liters and 183 kilograms of hazardous waste has been avoided in 1991.

In 1989, 102,870 kilograms of lead were excessed to the lead bank. In 1991, of the 54,633 kilograms of materials handled under different recycling options defined by 40 CFR 261, 39,006 kilograms were recycled lead. The remainder comprised 7,446 kilograms of other RCRA-hazardous scrap, 2,234 kilograms of silver, 1,000 kilograms of nickel-cadmium batteries, and 4,947 kilograms of solvents and other recyclables.

Radioactive Waste Reduction. Waste reduction through waste segregation is the most frequently reported source-reduction technique in the radioactive waste stream. In 1990 the TRA segregated radioactively contaminated water from contact with nonradioactive waste, eliminating 1,900 cubic meters of water to be treated per year. Another example of radioactive waste reduction is sufficient surveying of potentially contaminated material before the material is declared radioactive by association. Previously, all associated waste was condemned as radioactive. The current reduction technique is especially important in decommissioning and ER activities, when the volume of radioactive material is unknown.

In 1990, ER and decontamination and decommissioning activities resulted in the generation of 0.1 cubic meters of hazardous waste and 97 cubic meters of radioactive waste. Through radioactive screening, an additional 742 cubic meters of radioactive waste was avoided, soil that had been classified radioactive by process knowledge and would have been disposed of as such without intensive surveying. In 1991 ER and decontamination and decommissioning activities resulted in the generation of 45 cubic meters of radioactive waste and 1.9 cubic meters of mixed waste. More than 7 cubic meters of radioactive waste was avoided through intensive surveying.

Mixed Waste Reduction. Material substitution and waste segregation provided source reduction opportunities in the mixed waste stream. On the Specific Manufacturing Capability project at TAN, the depleted uranium armor on military tanks was treated with a fine coat of aluminum to prevent oxidation. Working with the aluminum resulted in a reactive waste, and the cleaning process resulted in a hazardous solvent waste. Substituting a coat of ordinary latex paint for the aluminum coating eliminated all mixed waste generation (12 cubic meters/year) and reduced low-level waste generation (0.33 cubic meters/year).

High-energy particulate air filter changeout for the WERF incinerator generated a mixed waste because of the material on the filters. By separating the filter from the aluminum frame, 12.8 cubic meters of mixed waste was eliminated for each changeout period (approximately once a year when the incinerator is in full operation).

Nonhazardous carburetor cleaners are now used at the RWMC to eliminate 3.8 kilograms of mixed waste. Contaminated lead is used for shielding whenever possible to eliminate the contamination of clean lead. When clean lead must be used, it is usually wrapped in a protective coating so that the lead does not become contaminated. More than 150,000 kilograms of the mixed waste reported in 1991 (94 percent) was previously contaminated lead. This contaminated lead was moved into mixed waste storage in 1991.

High-Level Liquid Waste Evaporator

Upgrade.¹ Evaporation of high-level mixed waste is essential in minimizing the high-level mixed waste inventory and conserving tank farm storage space. The waste evaporator upgrade will maintain optimum calciner feed stock concentrations and optimum storage capacity of the tank farm. The new high-level mixed waste evaporator will be constructed in the New Waste Calcining Facility with project completion in FY 1994.

Sodium High-Level Waste Generation

Reduction.² High-level liquid waste storage capacity is a limiting factor in ICPP operations. Waste containing sodium is of particular concern due to characteristics of sodium which make it more difficult and more expensive to calcine. Decontamination solutions containing sodium are the major contributors to the tank farm waste inventory. The ICPP Decontamination Development Laboratory is investigating new decontamination techniques that allow for the reduction of sodium waste generated during decontamination. Historically, sodium waste inventory was solidified by blending one part sodium waste with five parts zirconium waste in the calcination process. Because of the larger inventory of sodium waste compared with the quantity of zirconium waste now in storage, other calcination flowsheets with cold chemicals will be identified for processing sodium waste after the zirconium waste has been depleted. In addition, non-calcination techniques such as neutralization, grouting, and/or ion exchange will be investigated and developed for employment toward sodium waste. These techniques may be more

cost-effective when compared with the calcination of sodium waste with cold chemicals. Additional sodium waste will be generated from the decontamination and decommissioning of the facility. Due to the ICPP's change in mission, zirconium waste will no longer be generated.

LAND DISPOSAL RESTRICTIONS

The Hazardous and Solid Waste Amendments (HSWA) of 1984 were in response to public and regulatory concern over the impacts of continued land disposal of hazardous wastes. The Environmental Protection Agency (EPA) has responded to the HSWA by codifying treatment requirements for hazardous wastes that pose a risk to the public or the environment when land-disposed. These statutory requirements include Land Disposal Restrictions for mixed waste. EPA's approach has been to organize wastes into risk-based groups based on mobility, volume, and toxicity. Congress prohibited the land disposal of these Land Disposal Restriction wastes.

The EPA has evaluated commercial treatment technology and treatment capacity and has established mandatory treatment standards (40 CFR 268) based on methods considered to be the Best Demonstrated Available Technologies. Those treatment standards are based on concentrations of the specific waste or as specific technologies that must be applied to the waste prior to land disposal. Other compliance options are available; however, the majority provide short term relief only.

The ultimate goal of Congress was to eliminate land disposal of untreated hazardous wastes. Storage of Land Disposal Restriction waste is prohibited except for the purpose of accumulating sufficient quantities to facilitate proper treatment, recovery, or disposal.

With the enactment of the Federal Facilities Compliance Act (FFC Act), contractors will be subject to fines and penalties with respect to the storage of Land Disposal Restriction mixed waste and DOE may be subject to fines and penalties within three years. The reports required through the FFC Act will involve the development of data and the consolidation of database information on stored Land Disposal Restriction mixed waste. The FFC Act has significantly increased the

1. Activity Data Sheet ID-1001-WN.

2. Activity Data Sheet ID-1002-WN.

requirements for Land Disposal Restriction compliance.

Solvents and California List wastes—hazardous metals, halogenated organic compounds, and polychlorinated biphenyls (PCBs)—generally became subject to Land Disposal Restriction prohibitions in 1986 and 1987, respectively.

On May 8, 1990, the EPA granted a two year National Capacity Variance for Third-Thirds mixed wastes making the Land Disposal Restriction effective date for these mixed wastes May 8, 1992. Storage of a waste generated after its applicable effective date could be considered a violation of the Land Disposal Restriction Storage Prohibition. This compliance concern is clearly a national issue affecting many federal facilities.

Assumption

Newly generated Land Disposal Restriction waste will not be accepted for storage without existing treatment and disposal capabilities.

INEL Land Disposal Restrictions Status

The INEL has taken action to prudently address Land Disposal Restriction compliance options in order to ensure the continued operation of essential INEL facilities and programs. With the expiration of the National Capacity Variance for Third-Thirds May 8, 1992, and the lack of viable treatment options for mixed waste in general, the INEL has had to evaluate the curtailment of the continued generation of mixed waste. Project-based wastes include mixed wastes from the Specific Manufacturing Capability operations, Idaho Chemical Processing Plant operations, ER Program and decontamination and decommissioning operations, research and development projects, and laboratory wastes. In addition to project-based wastes, decontamination and decommissioning projects and environmental remediation characterization samples are also anticipated to generate wastes subject to Land Disposal Restriction storage prohibitions.

DOE-ID is currently acting to accelerate mixed waste treatment technologies implementation at

the INEL. Concurrent reduction of mixed waste generation sources and strengthening necessary controls on the generation of mixed waste has also been implemented.

DOE-HQ is in the process of attempting to obtain regulatory relief in the form of an additional extension of time. However, this relief, if granted, will only be temporary, and will not solve the problem for the INEL.

The status of the INEL with respect to Land Disposal Restriction compliance is summarized as follows:

- The INEL is in compliance with Land Disposal Restriction requirements related to hazardous waste (with no radioactive component) generated or stored at the site.
- Federal regulations currently exempt mixed waste from the storage prohibition if placed into storage prior to the Land Disposal Restriction effective date. These mixed waste streams are being stored while treatments are under development. It is important to note that Land Disposal Restriction storage prohibitions apply to these wastes once they are removed from storage, treated, or actively managed.
- In addition, wastes in storage at TAN, the ICPP, ANL-W, and Specific Manufacturing Capability facility, are being characterized and correctly assigned RCRA Hazardous Wastes Codes based on process knowledge and analysis.
- A National Case-by-Case Petition Extension Application has been submitted by DOE-HQ to EPA headquarters to extend compliance for known Third-Thirds mixed waste generated from May 8, 1992, to May 8, 1994, in one-year increments. This extension will not provide permanent Land Disposal Restriction relief for the INEL. It is uncertain whether ER Program generated soil and debris are included. A current regulatory interpretation for ER waste is that the Land Disposal Restriction concerns for the waste will be included in individual project Records of Decision.
- DOE is considering submitting a No-Migration Petition for high-level mixed waste treated by the ICPP calciner operations.

- Currently, DOE-ID is aggressively pursuing the treatment of most non-compliant mixed wastes affected by the May 8, 1992, Land Disposal Restriction.
- The following Land Disposal Restriction wastes have been successfully treated, mercury by amalgamation, solvent-contaminated groundwater by carbon absorption, chromate waste by solidification, mercury and nickel waste by amalgamation, and mercury-contaminated waste by ion exchange.

Treatments for many wastes are not presently available for use. Steps are now being taken to accelerate implementation of certain treatments for Land Disposal Restriction mixed wastes. The current focus of mixed waste treatment technology for the INEL includes amalgamation, bioremediation, ion exchange, solidification, smelting, neutralization, stabilization, reaction, and lead recycling.

WASTE STREAMS

In addition to present WM operations, DOE-ID and its contractors are actively involved in developing improved strategies for managing wastes generated at the INEL. The INEL generates or receives several different types of materials and wastes: nonhazardous, hazardous, low-level/mixed low-level, transuranic/mixed transuranic, and high-level/mixed high-level wastes, and spent nuclear fuel. In addition, the INEL stores large quantities of transuranic and transuranic mixed wastes. The INEL also stores a large quantity of spent nuclear fuel. Because each waste type is governed by different regulations and requires differing treatment, storage, and disposal practices, DOE-ID organizes all its wastes by individual waste streams. Waste streams are identified pathways beginning at the generation of a given waste and ending at final disposal and are specified by waste type.

Most waste generated at the INEL is nonradioactive solid or hazardous waste. Hazardous waste is temporarily stored on-site and is treated and/or disposed of off-site at an EPA-permitted facility. Nonhazardous waste is presently disposed of on-site at the Central Facilities Area (CFA) landfill.

High-level and low-level radioactive wastes are generated in smaller quantities. Additionally, spent nuclear fuel has been received at the ICPP for interim storage. Most of the high-level waste generated at the INEL begins as liquid waste (i.e., liquid generated by fuel processing) and is temporarily stored in stainless steel tanks contained in concrete vaults at the ICPP until the waste is solidified at the New Waste Calcining Facility for safe interim storage. Reprocessing of fuels for uranium and other resource recovery has resulted in the production of solid calcine and sodium-bearing liquid high-level waste. The INEL also stores an inventory of unprocessed spent nuclear fuels. Continued receipt of fuels will add to this inventory. DOE has discontinued reprocessing these fuels for the purpose of uranium recovery. High-level waste and spent nuclear fuel are awaiting permanent disposal at an off-site location.

Most low-level waste may be disposed of on-site. Approximately one-half of the low-level waste disposed of on-site is processed to reduce volume and stabilize the waste to the extent possible before disposal by incineration, compaction, or sizing. Most of this treatment occurs at the Waste Experimental Reduction Facility (WERF), which is located at the Power Burst Facility (PBF) area. WERF is currently shutdown pending a thorough procedures and practices review. DOE-ID plans to restart WERF in the third quarter of FY 1993.

Waste that is not treated is sent directly to the RWMC for disposal. The waste is placed in pits and covered with a thin layer of earth. A state-of-the-art facility is being designed to accommodate the INEL's low-level waste disposal needs. This new facility will be used when the RWMC is closed in the year 2000. Some low-level waste does not meet criteria for on-site disposal. This "orphan" waste will be temporarily stored until treatment and disposal options are developed.

Mixed wastes are generated in smaller quantities but pose significant disposal problems. The INEL is currently storing and producing mixed wastes containing solvents and California List hazardous components. Mixed waste generation on the INEL has been separated into four categories:

- Discretionary: Waste streams that are already terminated or that will be terminated as soon as possible.
- Discretionary-Regulatory Drivers Exist: Waste streams that, if terminated, would violate a current regulation, consent order, or enforceable agreement.
- Non-Discretionary: Waste streams that must continue to be generated to maintain the approved safety envelope of the facility or activity (included in this category are other events over which the owner/operator has no immediate control).
- Discretionary-Emergency: Waste streams that cannot be terminated because of emergency response to unplanned events.

Curtailment of the last three categories to meet Land Disposal Restriction regulations would violate a different part of RCRA.

DOE-ID has initiated several processes aimed at obtaining regulatory relief. The most effective route may be on a case-by-case or treatability basis. Redirection of management strategy toward treatment rather than storage, and consideration of Land Disposal Restrictions and waste minimization goals in conjunction with process design will allow DOE-ID to bring the program into compliance.

Mixed waste (radioactive waste mixed with hazardous constituents) is difficult to treat and lacks a facility for disposal. Mixed waste (contact-handled) is being stored at the INEL's Mixed Waste Storage Facility and at ANL-W's Radioactive Sodium Storage Facility. Specific mixed waste generated at ANL-W (remote-handled) is stored at the Radioactive Scrap and Waste Facility. Mixed waste will be stored until a processing or disposal method is developed and selected. Technology development activities to treat mixed waste are under way. Mixed wastes are subject to Land Disposal Restrictions and will be treated to the extent possible.

While only small volumes of transuranic wastes are generated, large volumes of transuranic waste are temporarily stored on-site and will eventually be disposed of off-site. The majority of the

transuranic wastes now stored at the RWMC were generated off-site. In October 1989, the state of Idaho placed a moratorium on receiving off-site transuranic waste; any transuranic wastes received since that time are a result of on-site programs. Transuranic wastes received after 1970 but before the moratorium are temporarily stored at the RWMC. These wastes are awaiting permanent disposal at an off-site location, most likely the Waste Isolation Pilot Plant (WIPP) in New Mexico. Transuranic wastes generated prior to 1970 will not be eligible for disposal at WIPP and will require longer term storage until a permanent disposal facility is identified. In the interim, transuranic wastes are stored on asphalt pads and covered with soil for retrieval within 20 years. To prevent weather-related degradation of the waste containers, wastes will be retrieved, vented, assayed, examined, and stored indoors in RCRA-approved facilities while awaiting treatment (where necessary) and eventual disposal off-site.

The primary component of each waste stream strategy is waste avoidance. Specific long-term objectives are being developed to substantially reduce and/or eliminate wastes of all types at the INEL. For wastes that cannot be avoided, strategies are being developed to improve WM.

The first step in developing strategies for each waste stream is to identify the current situation. This includes identification of each waste stream and investigation of waste stream management practices and shortcomings. Based on the current situation and the goal of waste avoidance, a long-term plan has been developed for each waste stream. These strategies project how DOE-ID would like to see waste streams managed in the future. The current situation and the long-term goals are important for determining what actions would be appropriate for the next five years to avoid shortcomings in waste stream management and to meet the long-term goals for each waste stream. The vision statement for future WM at the INEL and the strategies for each waste stream are summarized below. Additionally, a discussion of treatment, storage, and disposal activities for each waste stream is presented.

Vision for Waste Management at the INEL

Presented below is a description of DOE-ID's vision of what the INEL and its operations are intended to encompass in the future. The discussions of each waste stream that follow also contain statements that more specifically describe DOE-ID's intentions for individual waste streams.

In the future, the focus of operations at the INEL will be on waste avoidance. Specific objectives to substantially reduce and/or eliminate wastes of all types will have been achieved by the INEL's facilities. Each facility will have aggressive goals for waste reduction. Wastes generated at the site will receive compliant treatment and will be managed in a manner that ensures the safety of the public, the environment, and the INEL workers.

Continued safe storage and disposal will be given

high priority. Disposal and storage sites will be designed with the ultimate fate of contaminants in mind, with no release to the environment, and for ease of monitoring and inspection. Any waste that cannot be safely managed will not be generated. Improvements in WM and practice will be continuous and in compliance with current laws. Future WM operations will anticipate changes in waste streams due to ER activities and changes in missions at the INEL. Wastes will be handled, treated, stored, and disposed of in a manner that will not create future environmental liabilities. All waste streams will be identified and appropriately managed. Storage, treatment, and disposal operations will have comprehensive monitoring, analysis, and assessment with independent oversight and public access to the results.

Nonhazardous Waste³**Assumption**

INEL generated municipal waste will be certified that the source of generation lacks hazardous and radioactive constituents. This waste will be disposed of at the existing INEL industrial landfill. The need for a transfer station and shipment of waste to a regional landfill no longer exists.

Current Situation. Nonhazardous waste generated in the INEL facilities is disposed of in a landfill located in the CFA. The INEL's Landfill Operations Program coordinates efforts by the INEL waste contractors to dispose of all nonhazardous (nonradioactive/noncontaminated and nonhazardous) waste generated. The landfill operations consist of activities to collect and dispose of nonhazardous waste. Nonhazardous waste is disposed at the landfill in three separate areas: (1) Sanitary Waste Landfill, (2) Industrial Waste Landfill, and (3) Asbestos Waste Landfill (see Figure 6-2). When possible, efforts are directed toward recycling waste.

Long-Term Vision. In the future, all materials will be recycled if possible. Wastes will be separated at the source to prevent cross-contamination of usable waste materials. In addition, the INEL will use recycled products wherever possible. This will ensure that the volume is minimized and the waste form complies with regulations for landfill disposal. The goal of reducing municipal solid wastes will be achieved.

Legend

→ Existing flow

The facilities in black lined boxes are proposed

3. Activity Data Sheet ID-4306-EG.

Figure 6-2. Nonhazardous Waste Stream Flow Chart.

Five-Year Goals. During the next five years, nonhazardous waste quantities will be reduced by 50 percent. This will be accomplished through a recycling program that has been initiated at the INEL. Currently, the INEL recycling program encompasses paper, wood, scrap metals, cardboard, and aluminum cans at select facilities. This program will be expanded to include all INEL facilities. The future strategy for management of nonhazardous waste at the INEL will be to reduce waste generated via aggressive waste minimization and disposal of generated waste in the industrial waste disposal pit located at the CFA.

Change from the Draft SSP

Former planning identified the INEL's involvement in the use of the regional landfill. Following thorough investigation of the INEL municipal waste, DOE has determined that the waste generated can be more economically placed in the existing, on-site industrial waste landfill. This complies with regulations governing the disposal of municipal waste. The need for the transfer station has been eliminated.

FY-1993 Planned Activities. Activities related to design and construction of the transfer station have been suspended as the use of the regional landfill has been cancelled. FY-1993 activities will continue to avoid and minimize waste generation and dispose of nonhazardous waste at the INEL industrial waste pit at the CFA.

Treatment. Treatment of nonhazardous waste primarily involves separating wastes with value for recycling. Waste segregation will take place at each INEL facility so that recyclables never enter the solid waste stream.

Waste Handling Facility.⁴ The multipurpose Waste Handling Facility will provide a centralized waste facility at ANL-W for collection, monitoring, and consolidation of ANL-W's nonradioactive, nonhazardous solid waste. Following consolidation, the waste will be transferred to the EG&G-operated CFA landfill.

Storage. No storage of industrial solid waste is expected.

Disposal. Disposal will continue at the INEL landfill at the CFA.

Major Milestones for Municipal Solid Waste Programs at the INEL

Complete development of Recycling Center
1st Quarter FY 1995

Implement advanced treatment and disposal methods
4th Quarter FY 1996

Complete construction of the Waste Handling Facility
4th Quarter FY 1996

Dollars in Thousands

Program	FY 1992	FY 1993
Nonhazardous Waste	5,129	125

Table 6-3. Funding for INEL Nonhazardous Waste Programs.

4. Activity Data Sheet CH-1605.

Hazardous Waste⁵

Current Situation. Hazardous waste is stored at the Hazardous Waste Storage Facility at the Central Facilities Area. This building is operated under interim status pursuant to RCRA regulations and is included in a Part B Permit Application. Hazardous wastes generated throughout the INEL are delivered to this facility. These wastes are then stored at the Hazardous Waste Storage Facility prior to shipment to an approved treatment, storage, or disposal facility. The duration of storage at the Hazardous Waste Storage Facility is intended to be no longer than necessary to facilitate off-site shipment. Hazardous waste is generally stored at this facility; the only exception is when it is beneficial to have off-site transportation pickup occur at the generating facility for direct shipment to a permitted commercial treatment, storage, or disposal facility (see Figure 6-3).

Funding for INEL hazardous waste programs is currently covered by all generator programs via a tax based on previous generation rates. These are not ER and WM funds exclusively and are, therefore, not identified in this section.

Assumption

INEL-generated hazardous waste will continue to be shipped to a commercial off-site facility for treatment and disposal.

Legend

Roadblock: Current moratorium of potential radioactive contaminated hazardous waste.

Proposed flow

Existing flow

The facilities in black lined boxes are proposed

Figure 6-3. Hazardous Waste Stream Flow Chart.

5. Activity Data Sheets ID-4310-EG, ID-1003-WN, CH-1601, and CH-1605.

Currently, a large volume of hazardous waste is generated at the INEL. Some of the materials disposed of could be reused or reprocessed. Some hazardous substances could be replaced by nonhazardous substances to reduce the amount of hazardous wastes generated at the INEL. Additionally, off-site disposal does not occur without liability, risk, and expense. Because of concern about this liability, DOE-HQ has placed a moratorium (Figure 7-4) on shipping any hazardous waste that could possibly be contaminated with radioactive components. These wastes are individually assessed to confirm the absence of radioactive contamination from DOE operations and are then authorized for shipment by DOE-ID. Lacking DOE-ID approval, the waste is treated as mixed waste and placed in the Mixed Waste Storage Facility. The DOE-HQ moratorium will not be lifted until DOE-ID ensures procedures are in place to minimize liability posed by off-site disposal.

Long-Term Vision. Hazardous waste that cannot be treated to render them nonhazardous or suitable for disposal in an environmentally safe manner will not be generated. A new staging and storage facility will be built to better handle hazardous waste. A chemical reuse program will be implemented. The goal of reducing hazardous waste generated and the volume of hazardous waste disposed of will be achieved.

Five-Year Goals. The following are the the INEL hazardous waste program five-year goals:

- Evaluate the need for a new hazardous waste storage facility with expanded capacity for safe interim storage of hazardous waste.
- Continue to accumulate hazardous waste in accordance with EPA regulations prior to off-site treatment and disposal.
- Develop an aggressive material-substitution program that limits the generation of hazardous waste.
- Evaluate the need for additional on-site treatment and disposal capability for hazardous waste.

FY-1993 Planned Activities. FY-1993 activities will continue work on lifting the moratorium. This will include finalizing the procedures and operative document that outlines how the INEL manages and handles hazardous

waste. Efforts will continue to find solvent substitutions and alternatives to hazardous waste. Activities will also continue to accumulate volumes of hazardous waste and shipments of these wastes to a commercial vender for destruction and disposal. These efforts are funded out of a common tax supplied to individual generators. The funds are not exclusively based but come from the funding source of the generator program.

Treatment.

Hazardous Waste Treatment.⁶ The hazardous waste treatment project will add a treatment system to the waste water system at the CPP-606 steam generation and water treatment plant at the ICPP. Regulations require neutralization of wastes now being discharged to the percolation ponds. The new system will include facilities for treating effluents containing residual acids used to regenerate ion exchange beds. The addition of this treatment system will maintain ICPP compliance with EPA regulations requiring treatment of this waste type prior to discharge to the environment.

Storage.⁷ One concern regarding hazardous waste is the possible need for additional hazardous waste storage. Based on anticipated changes in waste generation, facility operations may be changed to increase the frequency of off-site shipments and a new facility is planned to be constructed in the future. DOE-ID will be evaluating alternatives to ease current operating constraints and ensure personnel safety and regulatory compliance.

Most hazardous waste generated at the INEL is collected and temporarily stored at the Hazardous Waste Storage Facility prior to being shipped off-site to a commercially permitted treatment facility. Mixed waste is collected and stored at the Mixed Waste Storage Facility awaiting treatment or disposal options. Limited volumes of specific mixed wastes are planned for treatment at WERF to remove the characteristic hazardous constituents and allow the waste to be classified as low-level for disposal at the RWMC. The majority of mixed waste will require new technological advancements in a facility such as the Mixed/Low-Level Waste Treatment Facility for treatment prior to disposal.

6. Activity Data Sheet ID-1001-WN.

7. Activity Data Sheet ID-4302-EG.

In the interim, the waste must be properly stored and monitored.

Hazardous waste storage is planned to be moved from the current Hazardous Waste Storage Facility to a new facility. The new Hazardous Waste Storage Facility will provide many advantages over the current facility, including improved loading and handling capabilities, storage capacity, and coordination of mixed waste storage. This facility is in the early planning stage and will be added to the INEL RCRA Permitting Workplan and undergo public input through NEPA hearings.

ICPP Hazardous and Mixed Waste Storage.

Hazardous, mixed, and low-level waste is handled and stored at the CPP-1617 Hazardous and Radioactive Mixed Waste Staging Area and the CPP-1619 Hazardous Chemical/Radioactive Waste Facility. These two areas must fully comply with the hazardous waste requirements of RCRA.

The CPP-1617 Hazardous and Radioactive Mixed Waste Staging Area stores solid wastes, while the CPP-1619 Hazardous Chemical/Radioactive Waste Facility receives both solid and liquid wastes. Both of these areas receive waste from other ICPP areas and store the waste until it is shipped off-site.

Packaging and storage of radioactive waste, solid hazardous waste, and mixed waste at the CPP-1617 Hazardous and Radioactive Mixed Waste Staging Area takes place in a metal prefabricated building that is located within a paved, fenced yard. Cargo containers, located to the east and south of the storage building, may be used for the storage of waste.

The CPP-1619 Hazardous Chemical/Radioactive Waste Facility consists of five bays and a dock for storing liquid and solid hazardous waste. All areas of the facility are equipped with secondary containment to collect potential spills or leaks and to allow for rapid cleanup response if necessary. Waste loading and unloading is also conducted in CPP-1619. Bagged wastes are consolidated into drums.

ANL-W Hazardous and Mixed Waste

Storage.⁸ At ANL-W hazardous waste is currently stored in satellite accumulation areas. The Radioactive Scrap and Waste Facility stores remote-handled transuranic waste and mixed waste (low-level and transuranic), and the Radioactive Sodium Storage Facility stores mixed waste contaminated with sodium, and both radioactive (contact-handled) and nonradioactive sodium potassium. In addition, there is a process material storage facility (containing solid radioactive sodium), Building 703. DOE and the state of Idaho have entered into a Consent Order that became effective on April 3, 1992. Under the terms of paragraph 6.14 of the Consent Order: (1) DOE denies that the sodium in Building 703 (1,400 55-gallon drums) at the ANL-W site is hazardous waste; (2) EPA contends that the sodium is hazardous waste; and (3) until this issue is resolved, DOE has agreed to manage the sodium in Building 703, "... in compliance with all applicable interim status provisions of the Hazardous Waste Management Act and the *Rules, Regulations and Standards for Hazardous Waste*" A multipurpose, centralized Waste Handling Facility is planned to be constructed by FY 1996; the facility will accommodate 90-day RCRA storage at the ANL-W site.

Disposal

No disposal of hazardous waste occurs at the INEL. All hazardous waste is sent off-site for treatment and ultimate disposal.

Milestones for Hazardous Waste Programs at the INEL

Complete construction of Waste Handling Facility
4th Quarter FY 1996

Complete construction of New Hazardous Waste Storage Facility
1st Quarter FY 1998

8. Activity Data Sheets CH-1604, CH-1601, and CH-1602.

Low-Level and Low-Level Mixed Waste ⁹**Assumption**

Generated low-level waste will meet the waste acceptance criteria of the appropriate treatment, storage, or disposal facilities and generated mixed low-level waste will be temporarily stored in RCRA approved storage until final treatment and disposal capabilities become available.

Current Situation. At the INEL, low-level waste is primarily generated as the result of in-plant work in contaminated areas; the waste consists of materials such as rags, bags, scrap metal, and used protective clothing. In addition, some of this waste is generated by ER decontamination and decommissioning activities. This material is subject to the Waste Acceptance Criteria at the disposal facility. The Waste Acceptance Criteria specify prohibitions on items such as free liquids, hazardous chemicals, and gaseous waste, and further provide requirements for radioisotope content, packaging, accompanying package data, and verification requirements. It is the waste generator's responsibility to ensure all criteria are met for disposal. Compliance with any Waste Acceptance Criteria will be verified by inspection at the disposal facility and by periodic audits at the disposal facility. Liquid low-level waste generated at ICPP is disposed of by evaporation, with the remaining residue liquid then classified as high-level liquid waste.

Solid low-level waste generated at the INEL is, in most cases, first sent to WERF for compaction, sizing, stabilization, or incineration. The purpose of WERF is to stabilize and reduce the volume of the waste prior to disposal at the RWMC. Currently, WERF is shutdown while undergoing a thorough review of procedures and practices. DOE-ID is aggressively working towards a restart of WERF in the third quarter of FY 1993 with the intention of

substantially improving the operating efficiency of the facility.

Low-level mixed waste is both radioactive, qualifying as low-level in accordance with DOE regulations and the Atomic Energy Act, and hazardous, in accordance with RCRA regulations. There is currently no disposal facility for low-level mixed waste. Hence, much of the low-level mixed waste generated at the INEL has no destination but interim storage or evaporation as occurs with the liquid mixed waste at the ICPP. The exception is mixed waste that can be fully treated at the WERF through stabilization or incineration. In both cases, the goal is usually to achieve a waste form that no longer exhibits any of the characteristics of hazardous waste and can, therefore, be disposed of at the RWMC. Even after treatment, however, some mixed wastes still fail the Waste Acceptance Criteria for on-site disposal. These wastes are temporarily stored at the Mixed Waste Storage Facility until a disposal option becomes available (see Figures 6-4 and 6-5).

Low-level mixed waste generated at the INEL is stored in the Mixed Waste Storage Facility and at facilities at ANL-W. Quantities of low-level mixed waste generated from routine INEL operations are relatively small, but since a permitted mixed waste disposal facility does not exist, the storage space at the Mixed Waste Storage Facility building is insufficient. Cargo containers located outside the building provide for additional storage space. The building and the cargo containers are operated under interim status pursuant to RCRA regulations. The facility will be included in a Part B Permit Application. In addition to the Mixed Waste Storage Facility and ANL-W facilities, a new storage building has been constructed. The WERF Waste Storage Building will house mixed wastes awaiting incineration at WERF. The facility will be operational at the time of the WERF restart. Because of the lack of treatment and disposal alternatives for mixed waste, the ability to meet storage prohibitions established by the RCRA Land Disposal Restrictions is an area of ongoing discussions between DOE, the state of Idaho, and the EPA.

9. Activity Data Sheets ID-4310-EG, ID-4311-EG, ID-1001-WN, CH-1601, and CH-1603.

There are a number of mixed low-level waste streams that do not meet the criteria for on-site disposal because they contain hazardous compounds. These wastes include

- Pad A waste,
- Stored and buried reclassified mixed low-level waste,
- Greater-than-Class C mixed waste,
- Treated or untreated mixed low-level waste, and
- Performance assessment limiting waste.
- Special class waste

These wastes are being individually addressed to identify acceptable treatment, storage, and disposal options.

Long-Term Vision. RWMC will be stabilized and closed in accordance with applicable regulations. The final disposal site for mixed waste will be determined and the waste will be disposed of in accordance with applicable regulations. Waste generation will be reduced to the minimum amount possible; all wastes will be treated to meet the applicable requirements. All future waste streams will be anticipated and have appropriate storage, treatment, and disposal determined in advance. On-site transportation between the INEL facilities will meet Department of Transportation regulations.

Figure 6-4. Low-Level/Low-Level Mixed Waste Stream Flow Chart.

Five-Year Goals. Five-year goals for the INEL low-level waste program are divided into three areas:

1. Waste reduction and storage, including restarting WERF; increasing WERF grouting system capabilities; augmenting Mixed Waste Storage Facility capacity with WERF Waste Storage Building operations; upgrading WERF mixed waste treatment capabilities; and extending the useful life of RWMC through additional waste volume reduction prior to disposal.
2. RWMC, including improving methods for waste separation; improving performance assessment models; optimizing waste characterization; assessing waste stabilization and engineered barrier prototype activities; and preparing RWMC Closure Plan.
3. New mixed/low-level waste treatment and disposal, including beginning the necessary preliminary activities to develop a compliant, low-level waste treatment and disposal facility; and ensuring compliance with existing and proposed treatment, storage, and disposal regulations.

Change from the Draft SSP

The WERF was shutdown in February 1991 to upgrade safety documentation and operational procedures. Efforts are underway to bring WERF into operational status; operations are scheduled to begin in the third quarter of FY 1993.

FY-1993 Planned Activities. Volume reduction activities performed at WERF will resume as the facility restarts operations. Low-level waste disposal will continue at the RWMC. Between 80 and 100 cubic feet of low-level waste is expected to be placed in the RWMC disposal pit. Construction will be completed on the remote-handled low-level waste disposal vaults. Preconceptual design activities will be performed on the mixed/low-level waste treatment and disposal facilities along with efforts directed at siting the facility.

Treatment. Two low-level waste treatment facilities are located at the INEL: WERF and the ICPP. In addition, two new facilities are planned: the Mixed Low-Level Waste Treatment Facility and the Radioactive Sodium Waste Process Facility. Both facilities treat low-level and mixed low-level waste. WERF is the only solid waste treatment facility located at the INEL. WERF treats both solid low-level waste and solid mixed low-level waste; the facility is currently shutdown with a proposed restart in FY 1993. The ICPP treats only liquid wastes generated from operations at its plant and at other INEL facilities.

Waste Experimental Reduction Facility.¹⁰

WERF is the key site for treating low-level waste generated by the INEL operations. WERF reduces the volume of solid low-level wastes through incineration, compaction, and sizing. In addition, WERF performs low-level waste treatment to stabilize waste forms for improved disposal performance. WERF plans to perform incineration and solidification of mixed low-level solid and liquid waste. WERF is presently operating under interim status under RCRA. A Part B application is being prepared and will be submitted to the state of Idaho in early FY 1993.

By mechanically reducing the size of metallic material (i.e., by cutting the material into pieces and nesting the pieces compactly within disposal boxes), the average bulk volume of the metal waste is reduced by approximately 5:1. Incineration of combustible waste in the WERF incinerator results in a volume reduction of approximately 200:1. Compaction of waste results in a volume reduction of approximately 5:1. In total, the combined effect of sizing metallic wastes, incinerating combustible waste, and compacting wastes not suitable for incineration at WERF has approximately doubled the remaining useful life of the RWMC, where these wastes are disposed. The overall average volume reduction of waste processed at WERF is about 10:1. Currently, about 60 percent of the total volume of low-level waste generated at the INEL is sent to WERF as suitable for treatment; the remainder is sent directly to the RWMC for disposal without treatment.

10. Activity Data Sheet ID-4310-EG.

In February 1991, WERF operations were suspended to upgrade facility documentation and correct deficiencies. WERF is currently undergoing a review of procedures and practices with the intent of substantially improving the facility's operating efficiency and safety. DOE-ID intends to restart WERF operations by the third quarter of 1993.

Mixed/Low-Level Waste Treatment Facility.¹¹ The new Mixed/Low-Level Waste Treatment Facility will be built along with a new disposal system to provide a complete process for handling low-level and mixed low-level waste generated via operations at the INEL. This facility will be used to treat and stabilize mixed waste to render it acceptable for disposal, as well as to reduce the volume of both the mixed and low-level wastes prior to disposal. Advanced treatment technologies will provide regulatory acceptable methods for treatment and stabilization of the mixed waste that currently lacks a final disposal facility. Treatment of these wastes is necessary to remove the hazardous components, rendering them acceptable for low-level waste disposal. Hazardous wastes that are fully consumed in the process will also be treated at the Mixed/Low-Level Waste Treatment Facility. In conjunction with the preconceptual design of this facility, private sector abilities to treat mixed low-level waste are also being evaluated. A decision on the extent of private sector involvement will be made prior to conceptual design.

Radioactive Sodium Waste Process Facility. The new Radioactive Sodium Waste Process Facility will be built to provide the capability to remove and process sodium from radioactive material (low-level waste and transuranic) produced or stored at ANL-W. The facility's size and handling capabilities will meet all requirements for processing material stored at the Radioactive Scrap and Waste Facility and at the Radioactive Sodium Storage Facility. Treatment technologies will provide regulatory acceptable treatment of the mixed waste that currently lacks a final disposal

facility. Construction of this facility is planned to be completed by FY 2000.

Storage. Storage of low-level and mixed low-level waste takes place at several locations at the INEL.

WERF Waste Storage Building. Because storage at the Mixed Waste Storage Facility is near capacity, the WERF Waste Storage Building was constructed. It will hold low-level waste as well as mixed low-level waste awaiting incineration at WERF. This will alleviate storage problems posed by Mixed Waste Storage Facility capacity requirements. Waste planned for WERF incineration will be stored at the WERF Waste Storage Building. Mixed waste awaiting other treatment or disposal will be housed at the Mixed Waste Storage Facility. The WERF Waste Storage Building is covered under an extension of the RCRA Part A permit application.

Radioactive Scrap and Waste Facility.¹² The Radioactive Scrap and Waste Facility located at ANL-W is a four-acre plot consisting primarily of 16-inch diameter, 12-foot long, 1/4-inch thick steel pipes (liners) set vertically in the ground. Remote-handled radioactive mixed waste (low-level and transuranic) contained in double cans is lowered into the liners. The Radioactive Scrap and Waste Facility is operating under interim status as a mixed waste storage facility.

All scrap stored at the Radioactive Scrap and Waste Facility will be translocated into new, cathodically protected liners (within the Radioactive Scrap and Waste Facility), as the scrap is currently stored in carbon steel liners that are unprotected against the corrosive soil at the Radioactive Scrap and Waste Facility. The translocation schedule is based on risk to the environment. Therefore, radioactive waste and mixed waste will be translocated prior to the fourth quarter of FY 1994. When the waste has been translocated, the translocation of the scrap will begin.

11. Activity Data Sheet ID-4310-EG.

12. Activity Data Sheets CH-1601 and CH-1602.

13. Activity Data Sheet CH-1604.

Figure 6-5. Low-Level Waste Stream Flow Chart.

Radioactive Sodium Storage Facility. The Radioactive Sodium Storage Facility at ANL-W consists of cargo containers that store contact-handled radioactive mixed waste contaminated with sodium, and radioactive and nonradioactive sodium-potassium. This facility is operating under interim status as a mixed waste storage facility.

Building 703 Sodium Storage Facility.¹³ The Building 703 Sodium Storage Facility at ANL-W consists of one large building that stores approximately 1,400 55-gallon drums of contact-handled solid radioactive sodium. DOE and the state of Idaho have entered into a Consent Order that became effective on April 3, 1992. Under the terms of paragraph 6.14 of the Consent Order: (1) DOE denies that the sodium in Building 703 (1,400 55-gallon drums) at the ANL-W site is hazardous waste; (2) EPA contends that the sodium is hazardous waste; and (3) until this issue is resolved, DOE has agreed to manage the sodium in Building 703, “. . . in compliance with all applicable interim status provisions of the hazardous waste MA and the Rules, Regulations and Standards for Hazardous Waste . . .”

Disposal.¹⁴ Some low-level waste is disposed of on-site at the RWMC. This facility will eventually be closed and replaced by the New Low-Level Waste Disposal Facility.

Radioactive Waste Management Complex.¹⁵ The RWMC is the largest disposal facility at the INEL. The RWMC contains several facilities, including the Stored Waste Examination Pilot Plant and the Subsurface Disposal Area. When waste is received at the RWMC, a health physics technician performs a radiological survey and RWMC operations personnel perform a receipt inspection. If the waste does not comply with RWMC waste acceptance criteria, it may be returned to the generator, or made to conform at the RWMC, depending on circumstances. The Subsurface Disposal Area is a fenced area within the RWMC surrounded by a flood control dike and drainage channel. Although the Subsurface Disposal

Area contains some transuranic waste previously authorized for burial, it is presently devoted to pit and soil-vault disposal of low-level solid waste.

The disposal of solid radioactive waste began in 1952 at what is now called the Subsurface Disposal Area at the RWMC. In 1953, the Atomic Energy Commission decided that solid radioactive waste from the Rocky Flats Plant would be sent to the INEL for disposal. The first shipment from Rocky Flats was received in crates and drums in 1954. The waste, which contained transuranic radionuclides, was placed in pits and covered with earth. Between 1963 and 1969 the waste was dumped randomly into the pits. During this period, radioactive waste contaminated with transuranic radioisotopes was deposited below ground level at the RWMC. Although the waste contained quantities of transuranic radioisotopes, at the time of burial the classification of “transuranic waste” was not in use.

Pits: Currently, low-level wastes are buried in shallow pits. Pits are excavated to various sizes, generally to bedrock, and the bedrock covered with soil. After waste emplacement on this soil, the pits are back-filled with more soil.

Trenches: Trenches where waste was placed and usually covered with soil vary in length and depth. Trenches are no longer used.

Soil Vaults: Soil vaults are unlined, augured bore holes in the Subsurface Disposal Area. Hot Fuel Examination Facility canisters and other approved canisters containing remote-handled waste are discharged from approved shipping casks into soil vaults. When full, the vaults are covered with soil.

New Low-Level Waste Disposal Facility.¹⁶ The RWMC is planned to be closed around the year 2000. A new, state-of-the-art facility will be developed to take over the disposal activities performed by the RWMC. This facility is planned to be completed and operational by FY-2002. Progressive changes in regulations governing the disposal of radioactive and mixed low-level waste demand the development of a more advanced disposal and monitoring system. Implementation of new disposal technologies will serve to enhance the INEL's WM by significantly

14. Activity Data Sheets ID-4302-EG and ID-4311-EG.

15. Activity Data Sheets ID-4311-EG.

16. Activity Data Sheet ID-4302-EG.

reducing the chance of contamination to the environment. Advanced technological options being evaluated for long term structural and radiological performance are engineered above grade, earth mounded, concrete disposal vaults. Problems such as subsidence and high disposal/maintenance costs resulting from current disposal practices may be avoided by using more advanced technologies.

The new facility will have a permit to operate in accordance with applicable federal and state regulations for the disposal of mixed waste that has been treated to remove hazardous constituents. This will allow for the final disposal of the current and projected inventory of mixed/low-level waste at the INEL after it has undergone treatment. Currently there is no available facility to dispose of this waste. Since the volume of this mixed low-level waste is small, disposal of this waste in an approved off-site facility will also be evaluated.

Dollars in Thousands		
Program	FY 1992	FY 1993
Low-Level/Low-Level Mixed Waste	19,158	29,712

Table 6-4. Funding for INEL Low-Level and Low-Level Mixed Waste Programs.

Milestones for Low-Level Waste and Low-Level Mixed Waste Programs at the INEL

WERF restart

3rd Quarter FY 1993

Complete construction of remote-handled low-level waste disposal vaults

4th Quarter FY 1993

Finalize RWMC low-level waste performance assessment

4th Quarter FY 1993

Construct engineering barriers prototype at the RWMC

4th Quarter FY 1994

Begin translocating scrap at ANL-W

4th Quarter FY 1994

Select site for New Mixed/Low-Level Waste Disposal Facility

4th Quarter FY 1994

Construct New Mixed/Low-Level Waste Treatment Facility

4th Quarter FY 1994

Complete Closure/Post-Closure Plans for RWMC Subsurface Disposal Area

4th Quarter FY 1999

Construct New Mixed Low-Level Waste Disposal Facility

4th Quarter FY 2002

Construct New Radioactive Sodium Waste Treatment Facility

4th Quarter FY 2000

Transuranic and Transuranic Mixed Waste¹⁷**Assumption**

Transuranic waste currently stored in air support structures and on earth covered pads will be reconfigured and stored in RCRA approved storage modules at the Waste Characterization and Storage Facility until the waste can either be shipped directly to WIPP or treated, as necessary, to achieve final disposal of all stored waste (see Figure 6-6). Transuranic waste retrieved from cleanup efforts will also be stored at the Waste Characterization Storage Facility (this assumes small volumes of retrieved waste) and will also potentially be treated at the Idaho Waste Processing Facility with possible shipment to WIPP.

Current Situation. A major portion of the RWMC is dedicated to the retrievable storage of transuranic waste that is ultimately destined for a national repository. WIPP has been constructed as the repository for transuranic wastes. The WIPP land withdrawal bill has been approved in both the House and the Senate and has been signed by the President. WIPP is preparing for a testing program that will continue for five years which must meet conditions established by EPA. The final Waste Acceptance Criteria for WIPP are not known at this time, nor is the ultimate opening date of WIPP. Until a final disposal facility for transuranic wastes is open, the waste must remain in storage at the INEL in a manner that minimizes radiation exposure to workers at levels as low as reasonably achievable, protects the environment, and meets regulatory requirements.

Since 1970, transuranic wastes have been placed in above-ground retrievable storage at the Transuranic Storage Area (TSA) while awaiting long-term disposal. The TSA within the RWMC has accumulated waste since the 1970s in several different containers. Much of the waste is in containers on asphalt pads under an earthen cover. Containers are stacked on pads and covered with tarps. Investigations of the earth-covered transuranic waste at the TSA have shown that the

condition of the containers is relatively good; however, the containers are nearing or have exceeded their design life of 20 years. The TSA Retrieval Enclosure Facility is being built to retrieve this stored waste and place it in stable storage. Relatively small quantities of remote-handled wastes are stored in vertical, lined vaults installed in the ground. In addition to the earth-covered area, the TSA also includes many containers (primarily drums) that are being stored in two facilities consisting of asphalt pads, short concrete walls, and air- or structure-supported fabric covers. Some of the storage containers are approaching their design lives. EPA has issued a notice of noncompliance for current storage practices for waste in the air-support buildings. However, DOE-ID, EPA Region 10, and the state of Idaho have reached an agreement and RCRA approved storage modules are being built to store the waste. This agreement addresses EPA and state concerns for better inspection capability, while meeting DOE-ID's concerns for protecting workers.

It is intended that the majority of these wastes be retrieved, repackaged as appropriate, certified, and shipped to WIPP for final disposition. The vast majority of wastes stored within the TSA were generated at DOE facilities other than the INEL; most came from the Rocky Flats Plant. Shipments to the INEL of Rocky Flats Plant transuranic wastes and all other radioactive waste stopped in 1989.

Currently, EG&G Idaho and ANL-W are preparing test bins for the WIPP Experimental Program. Drums of transuranic waste examined in the Stored Waste Examination Pilot Plant are loaded into test bins at ANL-W and will be shipped to WIPP for a five year test phase. Following this testing the EPA will determine the conditions necessary for commencing disposal activities at WIPP. Routine shipments will then begin from the INEL to WIPP.

Assumption

Treatment capabilities will be provided for mixed alpha-contaminated low-level waste at the Idaho Waste Processing Facility.

¹⁷. Activity Data Sheets ID-4302-EG, ID-4308-EG, ID-4309-EG, ID-4311-EG, and CH-1601.

Total waste capacity:	6 million cubic feet
Current accumulated waste volume:	2.12 million cubic feet
Construction cost to date:	\$700 million
Estimated cost for 25-year operation:	\$2.5 billion
Estimated total time to fill the WIPP repository:	20 – 30 years

LF92 0094

Figure 6-6. Cutaway of WIPP. (Source: Office of Technology Assessment and U.S. Department of Energy.)

Long-Term Vision. The RWMC will be stabilized and closed in accordance with applicable regulations. All transuranic waste will be characterized, treated to the maximum degree practicable, certified, and removed from the state of Idaho for final disposal. All on-site transport of transuranic waste and remote-handled transuranic waste between the INEL facilities will meet Department of Transportation requirements.

Five-Year Goals. The principal objective of the transuranic waste management program is the shipment of all stored transuranic waste from the INEL to an approved permanent disposal location. While this cannot be accomplished over the next five years, the transuranic waste program can begin preparation so that when such shipment begins, it

can be done quickly and efficiently. A companion goal is the processing and final disposal of any transuranic waste retrieved by the ER program. Technical baseline objectives are developed on a five-year basis to be consistent with DOE's Five-Year Plan and on a fiscal year basis to track progress toward the five-year goals.

Change from the Draft SSP

The withdrawal of land at WIPP has passed in both the House and the Senate, and has been signed by the President. Following approval, EPA will set conditions that DOE must meet in order to begin the five-year test phase. Assuming DOE will meet all these conditions it is expected that test shipments from the INEL will begin in the third-quarter of FY 1993.

Five-Year Goals for the transuranic waste program are:

- Completion of all required activities to make the waste shipments for the WIPP alcove and bin test, a five-year test required to be completed prior to WIPP opening;
- Completion of construction of the Type I and the first Type II transuranic storage modules as part of the transuranic waste characterization and storage facility and begin operations;
- Completion of construction of the transuranic waste retrieval containment facility and begin operations;
- Completion of the Idaho Waste Processing Facility conceptual design and preliminary safety analysis; and
- Completion of the waste characterization and storage facility, and begin operations.

FY-1993 Planned Activities. Activities in FY 1993 will initiate shipments to WIPP to begin the test phase needed to validate WIPP. Efforts will complete the construction of four RCRA-permitted storage modules for transuranic waste stored at the RWMC. Inventory will be assessed of the waste stored at the Stored Waste Examination Pilot Plant where all above-ground transuranic waste storage is performed. Construction will commence on the Transuranic Storage Area Retrieval Enclosure. Functional and operational requirements will be identified for the Idaho Waste Processing Facility that will aid in the establishment of its mission.

Figure 6-7. Transuranic Waste Stream Flow Chart.

Treatment.

Idaho Waste Processing Facility.¹⁸ The issue of how to process transuranic wastes, especially mixed transuranic wastes, to meet RCRA processing requirements for hazardous wastes has yet to be resolved. If WIPP opens after completion of the test phase, then the mixed transuranic waste issue would be eliminated. WIPP has been granted the no-migration petition for the test phase and it is scheduled to receive waste on a test basis in two years. An immediately related issue of processing some transuranic waste that fails to meet WIPP Waste Acceptance Criteria for other than hazardous waste components would still exist, as would the issue of processing mixed low-level waste for disposal. To resolve these issues, plans are to design and construct the Idaho Waste Processing Facility.

The Idaho Waste Processing Facility is intended to provide the best demonstrated available technology for required volume reduction processing of all stored low-level mixed and transuranic wastes. This facility would take advantage of the Process Experimental Pilot Plant test and design experience. The facility is planned to be completed and operational by FY-2005.

This project provides for the design, procurement, and construction of facilities and equipment for the processing and thermal treatment of stored transuranic waste located at the RWMC. The mission, facility operations, and funding are being evaluated.

Radioactive Sodium Waste Process

Facility.¹⁹ The Radioactive Sodium Waste Process Facility will be built to provide the capability to remove and process sodium from radioactive material (low-level and transuranic) produced or stored at ANL-W. The facility's size and handling capabilities will meet all requirements for processing material stored at the Radioactive Scrap and Waste Facility and at the Radioactive Sodium Storage Facility. Treatment technologies will provide regulatory acceptable treatment of the mixed waste that currently lacks a final disposal

facility. Construction of this facility is planned to be completed by FY-2000.

Storage. Negotiations were initiated with EPA Region 10 in 1989 to resolve compliance concerns with transuranic mixed waste storage units. Design activities were initiated in 1990 for the modular construction of storage units that met applicable RCRA requirements based on ongoing negotiations. A consent order was signed in 1992.

Although negligible amounts of transuranic waste are generated and stored on-site, storage space is limited. The minor amounts of on-site generated transuranic waste are received at the RWMC or Radioactive Scrap and Waste Facility for interim storage until treatment and/or shipment to WIPP. Initial plans for transuranic operations assumed WIPP operations would begin in 1989. Possible receipt limitations of WIPP for the first five years while it is in a test phase have resulted in accumulation of transuranic waste.

Stored Waste Examination Pilot Plant.²⁰

The purpose of the Stored Waste Examination Pilot Plant (SWEPP) is to certify for disposal transuranic-contaminated waste stored at the INEL. Transuranic waste examination, certification, and venting consist of processing waste containers through the Stored Waste Examination Pilot Plant using real-time radiography and certifying waste containers for shipment to WIPP or, if uncertifiable, storing drums on an interim basis until a treatment process is operational for processing the waste for WIPP. Examination of stored waste includes weighing, ultrasonic examination of container integrity, real-time X-ray radiography, assay for fissile material content, and radiological surveys. The Stored Waste Examination Pilot Plant is in an operational standby status.

As part of the Stored Waste Examination Pilot Plant's operations, stored transuranic waste at the RWMC is received, vented to release any pressure or contained hydrogen, and examined for compliance with the WIPP Waste Acceptance

18. Activity Data Sheet ID-4302-EG.

19. Activity Data Sheet CH-1601.

20. Activity Data Sheet ID-4311-EG.

Criteria and transportation criteria. After examination, each waste container is handled in one of three ways: (1) stored for shipment to WIPP, (2) stored until a process is developed to make the waste comply with the transportation or disposal criteria, or (3) stored for eventual disposal as low-level waste.

EPA concurrence is now required for treatment and/or disposal of any waste (transuranic or low-level waste) containing compounds designated as hazardous by EPA (i.e., mixed wastes). Some of the wastes in each of the above categories contain such compounds and, therefore, are mixed wastes. WIPP personnel are working with EPA in an effort to establish mutually agreed-on modifications for the WIPP waste acceptance criteria that will make it possible to accept transuranic waste containing such compounds up to certain limiting amounts. Methods acceptable to EPA will also have to be determined for treating and/or disposing of low-level waste found to be low-level mixed waste. It is tentatively planned that such wastes contaminated with alpha-emitters will be treated as necessary at the Idaho Waste Processing Facility to reduce hazardous compounds to EPA-acceptable levels for final disposal in a suitable facility.

Radioactive Scrap and Waste Facility.²¹

The Radioactive Scrap and Waste Facility is a four-acre plot consisting primarily of 16-inch diameter, 12-foot long, 1/4-inch thick steel pipes (liners) set vertically in the ground.

Remote-handled radioactive mixed waste (low-level and transuranic) contained in double cans is lowered into the liners. The Radioactive Scrap and Waste Facility is operating under interim status as a mixed waste storage facility.

Radioactive Waste Management Complex.²² The RWMC is the only facility that stores and disposes of solid low-level waste. The Subsurface Disposal Area is used to dispose of low-level waste in pits and soil vaults. The RWMC also provides interim storage of transuranic waste

that has been examined as part of the Stored Waste Examination Pilot Plant operations, determined not to meet the definition of transuranic waste, and reclassified as low-level waste. Pending a decision on disposal, this waste is stored at the Stored Waste Examination Pilot Plant in the Certified and Segregated Waste Storage Building in the Transuranic Storage Area. Reclassified low-level waste is solid low-level waste and solid mixed low-level waste (although some residual liquids may be present). Mixed liquid low-level waste must be stored at the Mixed Waste Storage Facility in the PBF area.

In early 1970, when the concept of 20-year retrievable storage of transuranic waste was implemented, a proposal was made to store the waste in boxes and drums set on a bermed asphalt pad and subsequently cover the waste with soil. The current plan is to leave the stored waste on the asphalt pad, but maintain it in a covered building without the soil cover during retrieval operations.

The portable Air Support Waste Storage-2 building is located at the north end of the Transuranic Storage Area. The building, which was erected in October 1975 with a design life of 10 years, provides environmental protection for the stored transuranic waste containers and operations personnel. During 1989, all waste containers were removed from this area, the fabric was replaced, and the waste containers were returned to the building.

The Certified and Segregated Air Support Building is located just east of the Air Support Waste Storage-2 Building on an asphalt pad that is crowned at the center and slopes to the outside edges. The outside edges next to the concrete foundation contain gutters that run the length of the building. The building has an internal steel support structure installed beneath the fabric envelope to prevent the fabric envelope from collapsing onto the stored waste should the air supply to the building fail. The Certified and Segregated Air Support Building fabric envelope was constructed in 1984 of a flame resistant, fabric membrane system; it has a 10-year service life.

The Certified and Segregated Air Support Building is presently used for initial storage of waste containers prior to examination at the Stored Waste Examination Pilot Plant, segregated storage

21. Activity Data Sheets CH-1603 and CH-1604.

22. Activity Data Sheet ID-4311-EG.

after examination, and storage of wastes certified by Rocky Flats Plant.

The Intermediate-Level Transuranic Storage Facility, constructed in 1976, provides earth-shielded storage for intermediate-level, remote-handled transuranic waste. The vaults are embedded in a compacted earth berm. The berm is elevated, asphalt-surfaced on top, and sloped to prevent flooding around the vault covers. The Intermediate-Level Transuranic Storage Facility is used to store remote-handled transuranic waste packaged in 136-L drums, Hot Fuel Examination Facility canisters, or New Waste Calcining Facility filter canisters. The waste containers are transferred by crane to underground steel cylinder vaults. A shield plug and gasketed cover are placed on top of the vault and bolted shut.

Waste Characterization and Storage Facility.²³ Design activities have been initiated for the development and construction of a Waste Characterization and Storage Facility. New transuranic waste storage modules will be constructed to support retrieval, examination, and treatment storage requirements. The new storage modules will meet applicable RCRA requirements as defined by negotiations with EPA Region 10 and the state of Idaho. These new storage facilities, which are required to support retrieval of stored waste, are part of the Waste Characterization and Storage Facility line construction project. Functional and operational requirements have been issued for the design of these storage facilities. New storage facilities are required for the following operations:

- Head-end storage of retrieved waste for the examination, treatment, and repackaging process;
- Long-term storage for waste that is not certifiable or waste that is awaiting processing capability (i.e., pre-1970 wastes, PCB-contaminated waste, lead-lined waste packages); and
- Lag storage for certified transuranic waste or processed mixed low-level waste awaiting disposal.

23. Activity Data Sheet ID-4309-EG.

Because of the diverse nature of the wastes and methods of packaging, several process options must be available for treatment and repackaging in order to meet WIPP and TRUPACT Waste Acceptance Criteria. Waste that will be stored and characterized in the Waste Characterization and Storage Facility includes

- Oversized packaged/boxed metallic waste
- Special case waste
- Nontransportable WIPP waste

Design and construction of a Transuranic Waste Retrieval Enclosure Facility²⁴ to enclose the waste pads during retrieval operations is in progress and will be completed by FY 1996. The facility will provide a weather shield permitting year-round retrieval of wastes for examination at the Stored Waste Examination Pilot Plant. The enclosure will minimize the potential for contamination spread during operations. The building will be a large metal structure that will cover the entire pad.

It is intended that the facility will enclose the entire width and length of the Transuranic Storage Area pads. Operations space will be provided at the front of the facility for maneuvering retrieval equipment, overpacking contaminated containers, and loading boxes/drums for removal to a storage area. The operating area of the facility will be heated to permit year-round retrieval. All ventilation air will be High-Efficiency Particulate Air (HEPA) filtered before release through a monitored exhaust stack.

Sampling plans, methodologies, and analytical protocols also are under development to support sampling of stored transuranic waste for hazardous materials. Completion of this Stored Transuranic Mixed Waste Characterization project is required to provide data for preparation of a WIPP data package, to meet TRUPACT-II payload restrictions, and to support processing data requirements. The INEL is presently preparing test bins for WIPP. During loading of the test bins with transuranic waste, gas sampling and analyses and visual characterization of the waste are being performed.

24. Activity Data Sheet ID-4308-EG.

Disposal.

Waste Isolation Pilot Plant. The INEL is supporting efforts to initiate a five-year experimental test program at WIPP. Located near Carlsbad, New Mexico, WIPP is being developed as a geologic repository for defense-generated transuranic wastes. The purpose of the five-year experimental test is to evaluate the compliance of the repository with federal regulations. The INEL will be providing some of the necessary waste for the WIPP test program. Routine shipments of transuranic waste stored at the INEL will begin after WIPP receives approval to begin disposal operations.

Specially designed waste containers known as TRUPACT-IIs will be used to ship wastes to WIPP. Many of the current and future treatment facilities at the INEL are designed to load, handle, and wash these containers for transuranic waste hauling. Additionally, many of the current and future activities of waste treatment and characterization are due to the WIPP waste acceptance criteria. These criteria specify what types of waste are acceptable for disposal at WIPP. If after characterization a waste does not meet the WIPP waste acceptance criteria, it will either be treated to conform with the WIPP waste acceptance criteria or it will be segregated and stored until a disposal facility opens.

Dollars in Thousands

Program	FY 1992	FY 1993
TRU/Mixed TRU	40,984	57,374

Table 6-5. Funding for INEL Transuranic and Transuranic Mixed Waste Programs.

Milestones for Transuranic and Mixed Transuranic Waste Programs at the INEL

Begin construction of transuranic waste storage modules

1st Quarter FY 1993

Initiate retrieval/certification of transuranic waste

1st Quarter FY 1995

Complete construction of Waste Characterization Facility

3rd Quarter FY 1997

Idaho Waste Processing Facility preliminary safety analysis report

1st Quarter FY 1998

Complete Idaho Waste Processing Facility construction

4th Quarter FY 2005

High-Level and High-Level Mixed Waste ²⁵

Current Situation. Liquid high-level waste generated from previous fuel processing activities is stored in large tanks constructed inside concrete vaults in the ICPP tank farm area. All of the liquid is hazardous waste under RCRA due to its corrosivity and concentration of toxic metals. The DOE Byproduct Ruling of 1987 also established RCRA applicability to the hazardous components of mixed high-level wastes generated during spent nuclear fuel processing activities at the ICPP. The ICPP operates a calciner that is used to convert liquids to a dry calcine. The dry calcine is stored at the ICPP in specially designed bins contained in concrete vaults. The calcine is not only better suited for storage, but also significantly reduces material volume. As a dry material, the calcine is not considered corrosive. However, any toxic metals present in the liquid are concentrated in the solid calcine, so the hazardous designation is retained. This process is currently under review by EPA. The repository for high-level waste disposal is still awaiting final site selection and characterization (see Figure 6-8).

Long-Term Vision. The generation of high-level and mixed waste will be reduced to a minimum due to cessation of spent fuels reprocessing at the ICPP. All high-level waste will be characterized, conditioned as necessary, placed in certified containers, and disposed of in a federal repository. Facilities will be established for long-term custodial care and maintenance of spent fuel. These facilities will operate in compliance with applicable regulations until all spent fuel wastes have been disposed.

Five-Year Goals. The High-Level Waste Technical Development and Process Verification Program is performing research and development of a waste form and process for the immobilization of high-level waste calcine generated at ICPP for repository disposal. Agreement concerning all waste at the INEL impacted by RCRA Land

Disposal Restrictions will be negotiated with regulators during the five-year period.

Activity goals for the high-level waste program include:

- Recommendation of a glass-ceramic waste form for calcine immobilization;
- Completion of feasibility tests on calcine solids transport system and various unit operations for glass-ceramic process including grinding, blending, and can filling and densification;
- Completion of cold and hot demonstration tests.
- Submission of data sheet for line-item funding for Multifunction Pilot Plant.

Assumption

High-level mixed waste generated at the ICPP will require interim storage systems prior to the ultimate disposal at a permanent federal repository for high-level waste.

FY-1993 Planned Activities. Activities planned for FY 1993 include the following:

- Start existing tank farm valve box upgrades for RCRA compliance.
- Start up the New Calcining Facility and run campaign #3.
- Start and complete the high-energy particulate air filter leaching facility modifications.
- Complete No_x Abatement Project Title I design, and start Title II.
- Scope new technology programs.

Treatment.

Idaho Chemical Processing Plant.²⁶ The waste treatment activity at the ICPP will involve operation of the following facilities: (1) the New Waste Calcining Facility, (2) the High-Level Liquid Waste Evaporator, (3) the Process Equipment Waste Evaporator System, (4) the Off-Gas Treatment Systems, and (5) the Liquid Effluent Treatment and Disposal System (when it comes on line). Projects to upgrade these treatment facilities are discussed below.

25. Activity Data Sheet ID-1002-WN.

26. Activity Data Sheet ID-1001-WN.

New Waste Calcining Facility. The New Waste Calcining Facility processes high-level liquid radioactive wastes to a granular solid, thereby minimizing the quantity of liquid waste in interim storage. Processing represents an approximately 6.4:1 reduction in waste volume, and changes the waste form from a highly mobile and corrosive liquid to a more stable solid.

High-Level Waste Evaporator System.²⁷ The High-Level Waste Evaporator System located in CPP-633 was used to concentrate high-level liquid waste volumes to minimize the need for additional tank farm storage. However, the system is currently shut down awaiting decommissioning. A new high-level waste evaporator system will be installed in the New Waste Calcining Facility. This system will serve the same function as the former high-level waste evaporator, but will have improved operating characteristics. This evaporator is scheduled to come on line in FY 1994.

Process Equipment Waste Evaporator.²⁸ The Process Equipment Waste Evaporator divides a liquid waste stream from the ICPP into high-level and very-low-level streams. Compared with the original volume, the high-level waste fraction is small. This reduction conserves space in the high-level waste storage tanks and prevents dilution of the liquid in those tanks. The evaporation overhead stream is condensed and is currently a feed stream into the service waste system. The service waste system is continuously monitored to ensure radionuclides in the stream are maintained below regulatory concern. The Process Equipment Waste Evaporator processes about 1.4 million gallons of waste annually, reducing the waste volume sent to the tank farm to 38,000 gallons.

Figure 7-13. High-Level Waste Stream Flow Chart.

27. Activity Data Sheet ID-1001-WN.

28. Activity Data Sheet ID-1001-WN.

Liquid Effluent Treatment and Disposal.²⁹

Operation of the Liquid Effluent Treatment and Disposal System will serve two functions. The first function will be to eliminate liquid discharges containing slight amounts of radioactivity from the Process Equipment Waste Evaporator to the percolation ponds through treatment, vaporization, HEPA filtration, and off-gas discharge. The second function will be to recover nitric acid from the Process Equipment Waste overhead stream and recycle it to the New Waste Calcining Facility to be used as an off-gas scrub solution. This reduces the amount of cold scrub solution chemicals needed, thereby decreasing the contaminated waste volumes within the ICPP.

Off-Gas Treatment Systems. ICPP off-gas systems provide for plant contamination control by maintaining negative pressures on radioactively contaminated process systems and areas. This ensures that any air leakage will occur in the direction of the contamination, and not from contaminated systems to clean areas. Off-gas systems provide ventilation for process and makeup vessels, cells, and buildings. All off-gas systems are filtered and include monitoring equipment for detection of entrained radioactivity. Potentially contaminated off-gas streams are routed through a minimum of two (primary and secondary) banks of HEPA filters prior to being monitored for radioactivity and released to the atmosphere.

Storage.

Idaho Chemical Processing Plant. High-level solid and liquid wastes have been generated and stored at the ICPP. The liquid waste is temporarily stored in stainless steel tanks contained in concrete vaults. Liquid high-level waste is processed into a solid form at the New Waste Calcining Facility. The advantage of calcination, converting the liquid to a solid form, is that the resulting waste is much lower in volume, more stable, and more easily handled. The solid calcine is stored in the Calcine Solids Storage Facility, underground stainless steel bins that are contained in concrete vaults. Since installation of the original waste storage facilities at the ICPP, many modifications and improvements

have been made to improve safety and processing capabilities, including

- Replacement of the Waste Calcining Facility with the larger, remotely maintained New Waste Calcining Facility.
- Construction of the new Calcine Solids Storage Facilities, incorporating an improved design with passive ventilation systems and improved shielding characteristics.
- Replacement of most of the High-Level Tank Farm transfer piping with double encased lines and lined sumps with radiation monitors.
- Installation of extremely accurate level measuring equipment in the Radioactive Waste Tank Farm tanks.

The ICPP continues to evaluate and upgrade WM systems. Projects planned are as follows:

- A portion of the Radioactive Waste Tank Farm may be replaced. Due to the cessation of fuel reprocessing at the ICPP, the decision to construct or not to construct additional tanks has been deferred until FY 1993.
- Construction of one additional Calcine Solids Storage Facility will provide for anticipated calcine storage needs. The new facility will be bin set #8.
- Construction of a facility for converting the calcine produced at the ICPP to a durable glass-ceramic waste form for disposal in a federal repository is scheduled for completion in FY-2014. This facility will process both new and old calcine retrieved from the eight Calcine Solids Storage Facilities.

Tank Farm/Calcine Storage Operations.

Tank Farm Operations and Calcine Storage activities are necessary to ensure that ICPP waste storage operations are conducted as safely as possible. The driving forces behind these activities are fuel conditioning operations, decontamination and decommissioning of existing facilities, and the need for processing existing waste in the Tank Farm. Tank Farm is comprised of 11 300,000-gallon stainless steel tanks enclosed in subsurface concrete vaults. Tank Farm operations ensure the proper storage of liquid high-level mixed wastes generated from fuel reprocessing operations and from plant liquid effluent discharges. Tank farm activities include continuous level and density monitoring (both electronic and

29. Activity Data Sheet ID-1001-WN.

daily operator level readings), transfer operations, tank off-gas system operation, tank cooling, and periodic corrosion monitoring tests.

Calcine Solids Storage Facilities. High-level radioactive solid wastes resulting from the calcination of liquid wastes are stored in near-surface stainless steel bins situated within concrete vaults, each containing three to seven bins (see Figure 6-9). Vault (bin set) capacity varies from 220 cubic meters of calcined wastes in the oldest set to 1,100 cubic meters in recently constructed bin sets. New bins and vaults are constructed as needed. Stainless steel bins are designed for a lifetime of at least 500 years. Cooling air is monitored at the existing bin sets via continuous electronic and daily operator readings. The calcined waste is stored in a manner allowing it to be retrievable.

Continued calcination of high-level liquid waste to solid waste form (calcine) requires additional calcine storage facilities. Seven Calcine Solids Storage Facilities currently exist. Four are full and the fifth is nearly full. Additional storage volume will be required for future operations and for the solidification of the existing liquid inventory. The ICPP process computer simulation program shows that the eighth bin set is needed by FY-2002.

Disposal.

High-Level Waste Repository. While WIPP is being designed and tested for disposal of transuranic wastes, a separate facility is being designed for high-level wastes. The facility is undergoing site selection and site characterization. Yucca Mountain in southern Nevada has been selected for characterization. This site, however, may not be the location of the final repository.

While the timing and location for such a facility being operational is uncertain, DOE at the INEL is working to ensure that safe interim storage is provided even if that interim storage is long term.

Dollars in Thousands		
Program	FY 1992	FY 1993
High-Level/ High-Level Mixed	72,900	117,697

Table 6-6. Funding for INEL High-Level and High-Level Mixed Waste Programs:

Milestones for High-Level and High-Level Mixed Waste Programs at the INEL

Begin installation of High-Level Liquid Waste Evaporator at ICPP
2nd Quarter FY 1993

Perform test on new High-Level Liquid Waste Evaporator
3th Quarter FY 1993

Begin construction of Integrated Cold Multifunction Pilot Plant
4rd Quarter FY 1997

Startup of Liquid Effluent Treatment and Disposal Facility at the ICPP
4st Quarter FY 1992

Begin construction of full-scale NO_x Abatement Facility
3th Quarter FY 1994

Install and place into service four High-Level Waste storage tanks
2nd Quarter FY 1999

Figure 6-9. Calcine Solids Storage Bin Set.

Spent Fuel

Assumption

DOE-owned and -managed spent fuel at the INEL will require interim storage prior to disposition at a national repository, or processing.

Current Situation. Spent fuel is not designated as a “waste.” Existing rulings identify it as a recoverable/reprocessable resource. Regulation governing the storage, treatment, and disposal of hazardous wastes do not apply.

Current national policy precludes processing commercial spent fuel to recover fissile materials. Instead, it establishes a geologic repository and a monitored retrievable storage (MRS) facility to provide for disposal of materials falling within this category. Current plans call for a MRS facility to open in FY 1998, with a repository to follow sometime after FY 2010 (see Figure 6-10).

Spent fuel is currently stored at the Power Burst Facility (PBF), Test Reactor Area (TRA), Test Area North (TAN), Idaho Chemical Processing Plant, Argonne National Laboratory-West, and Naval Reactors Facility in various dry and wet storage facilities. Accurate records of spent fuel are being maintained by the groups accountable with a detailed description of the fuel fissile amounts and where they are located.

The ICPP has compiled a record of spent fuel that is being stored at the INEL site and plans to take possession of it and either condition or ship the fuel directly to the repository or the MRS facility. At the present time all U.S. Navy fuel and TRA test reactor fuel is sent to the ICPP for storage. ANL-W is in the process of developing their own system to process their spent fuel into new fuel elements for their reactor. This process is part of DOE’s Integral Fast Reactor program.

The following is a list of spent fuel elements that exist at the various INEL facilities:

- Three Mile Island debris;
- Commercial Light Water Reactor fuel assemblies;
- Loss-of-fluid test facility;
- PBF fuel;
- PBF fueled test trains;
- Miscellaneous core components/debris including pins, fuel rods, remnants, pieces, samples, pellets, residue, specimens, and scrap (stored at various on-site locations);
- Naval reactor fuel; and
- ANL-W (EBR-II) fuel.

Long-Term Vision. All spent nuclear fuel will be placed in a national geologic repository for final disposal. All spent fuel elements will be sent first to a MRS facility and ultimately to the national repository. No spent fuel will be disposed of at the INEL.

Five-Year Goals. The current status of both the MRS and the repository is uncertain. While plans are underway for the development of each, the timing is questionable, especially in light of the delays the WIPP facility is undergoing. It is expected that similar delays will be experienced with both the MRS and the repository.

Recognizing the immediate needs of the INEL spent fuel, efforts are required in the near term. Various locations exist at the INEL that house spent fuel elements from various locations. These storage configurations consist of both wet and dry storage. Wet storage maintains the fuel elements in a water pool basin where the water acts as a shield to the radiation. Dry storage consists of various types of shielding, such as lead, maintained in rooms or casks. In all cases, except for the TAN water pool, spent fuel is maintained in a facility adequate for interim storage until a MRS is established or a repository built.

The TAN water pool is nearing its life expectancy for storage of fuel elements. The TAN water pool houses primarily the Three Mile Island debris. Efforts are underway to construct dry canister casks for the Three Mile Island debris, with the goal to begin removal of this debris within the next five years.

The following specific five-year goals exist for the spent fuel program:

- Prepare and issue cask procurement contracts;
- Begin the preliminary construction activities for cask maintenance facility;
- Initiate construction of cask dry storage;
- Initiate cask loading of spent fuel materials; and
- Finalize treatment and final disposal issue.

FY-1993 Planned Activities. Activities in FY 1993 will perform engineering design of the storage casks for the fuel drying system. The storage pad will be constructed and the tractor used to maneuver the casks will be procured. Efforts will continue to provide preventive maintenance of the TAN water pool to ensure safe storage of the spent fuel until it can be placed in the more stable dry casks.

Treatment. The ICPP may condition certain spent fuel elements to make them more accessible to the MRS or the repository requirements. Conditioning may include dissolving, grinding, or other methods of adapting the spent fuel elements.

Storage.

Spent Fuel Dry Storage.³⁰ Currently spent nuclear fuel from several sources resides in the TAN Hot Shop water pool. The majority of this fuel is from the Three Mile Island debris. The TAN water pool was built in the 1950s to support other projects. It has been determined that the water pool is not an appropriate location for the

long-term storage of this material while a high-level waste repository is developed.

Therefore, interim long-term dry storage casks will be built to house the spent fuel currently in the TAN water pool. Once the casks are built, the fuel will be dried and transported to the casks, where it will remain until disposal in the repository. It is anticipated that all spent fuel in the TAN water pool will be removed and placed in dry storage by FY 1998.

Disposal.

High-Level Waste Repository. While WIPP is being designed for disposal of transuranic wastes, a separate facility is being designed for high-level wastes. The facility is undergoing site selection and site characterization. Yucca Mountain in southern Nevada has been selected for characterization. While the timing and location of such a facility are uncertain, DOE at the INEL is working to ensure that the spent fuel is properly stored even if that interim storage is long term.

Dollars in Thousands		
Program	FY 1992	FY 1993
Spent Fuel	4,064	6,745

Table 6-7. Funding for INEL Spent Fuel Program.

Milestones for Spent Fuel Program at the INEL

Successfully fabricate first cask
1st Quarter FY 1993

Initiate dry storage of TAN water pool spent fuel
1st Quarter FY 1994

All spent fuel removed from TAN water pool
4th Quarter FY 1997

30. Activity Data Sheet ID-4312-EG.

Figure 6-10. Spent Fuel Flow Chart.

Roadblock: The ICPP mission transition places question of future processing of spent fuel

Proposed flow

Existing flow

The facilities in black lined boxes are proposed

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CONTINUITY OF OPERATIONS³¹

This section relates to operation and maintenance of WM facilities at the INEL. It is DOE-ID's responsibility to ensure the continued safe operation of each facility at the INEL. Part of this responsibility involves upgrading facilities, replacing equipment, assuring quality control and quality assurance programs are in place, and other tasks that relate to the continuity of operations. The major activities relating to continuity of operations include compliance, the State Monitoring Agreement, WM NEPA compliance, waste minimization, environmental monitoring, the ICPP, and the Active Underground Storage Tank Program.

Compliance

The overall management and coordination of WM compliance efforts are part of continuity of operations. Compliance entails research of governmental regulations (e.g., RCRA, TSCA, NEPA) to identify areas that require adherence to stipulated regulations and the development of a plan to ensure the regulations are complied with or the structuring of a schedule to ensure that it comes into compliance. All regulations not specifically included as part of existing activities are included in this task, including all external regulations from EPA, Nuclear Regulatory Commission, OSHA, the Department of Transportation, etc., as well as internal DOE Orders.

State Monitoring Agreement³²

The State Monitoring Agreement is a voluntary agreement between the state of Idaho and DOE-ID that was developed to ensure health, safety, and environmental protection. The agreement calls for a group of independent individuals assigned by the state to act as an oversight committee to review WM activities at the INEL.

31. Activity Data Sheets ID-4301-EG, ID-1001-WN, ID-4103-EG, and ID-4104-EG.

32. Activity Data Sheet ID-4104-EG.

Waste Management NEPA Compliance

NEPA regulations require that the INEL assess potential environmental impacts of actions taken in regard to ER and WM activities. This task covers NEPA requirements for the WM activities by providing review of environmental impacts of future facility upgrades and construction. The NEPA process will be followed to ensure proper identification of impacts and to ensure public input concerning these activities is received.

Waste Minimization³³

Through its Pollution Prevention Program, the INEL has developed a policy to reduce the total amount of waste that is generated and disposed at the INEL. The implementation of a waste minimization policy calls for source reduction, material substitution, and recycling. This policy applies to hazardous, nonhazardous solid, radioactive (transuranic, high-level, and low-level), radioactive mixed, and nonhazardous waste. Waste minimization is a prime consideration in research activities, process design, facility upgrades or modernization, new facility design, facility operations, and facility decontamination and decommissioning.

Environmental Monitoring

The environmental monitoring program is designed to determine whether WM practices are having an adverse effect on the environment and, if so, how these practices might be changed to decrease or eliminate those impacts. This is accomplished by sampling and monitoring air, surface water, drinking water, nonradiological effluents, ambient radiation levels, and biotic communities. These activities are provided by both internal and external organizations to give credibility and independence to the monitoring. The monitoring occurs at various locations, including inside and outside the perimeter of all facilities, and inside and outside the INEL boundaries. Because environmental monitoring is a major activity under continuity of operations, it is discussed separately at the end of this chapter.

33. Activity Data Sheet ID-4103-EG.

Idaho Chemical Processing Plant

Many tasks must be completed to ensure the continued safe operation of the ICPP. These include the following specific programs and equipment and facility upgrades: General Waste Operations, Environmental Compliance, Surety of Operations, Environmental Monitoring Equipment, Waste Tank Inspection Equipment, Calcine Storage Level Detectors, Off-Gas Cleanup and Monitoring, and Percolation Pond Upgrade.

Active Underground Storage Tank Program

The Active Underground Storage Tank Program under WM deals with active regulated and active nonregulated, in-use underground tanks. EPA requires that all active tanks be upgraded or replaced with tanks that meet the requirements of EPA regulations. An Active Tank Management Program has been established that builds and maintains a tank database, prioritization of tank systems, upgrades and modifications, tank systems leak testing, tank closures, new system installations, tank product release investigations, and corrective action planning. The main thrust of the program is to remove and replace all out-of-date underground storage tanks.

Dollars in Thousands

Program	FY 1992	FY 1993
Continuity of Operations	53,978	69,623

Table 6-8. Funding for INEL Continuity of Operations.

Major Milestones for Continuity of Operations at the INEL

WERF "Part B" permit application
1st Quarter FY 1993

Mixed Waste Storage Units "Part B" permit application
4th Quarter FY 1993

Issue DOE-ID 5820.2A
4th Quarter FY 1993

Replace active regulated underground storage tanks
4th Quarter FY 1994

Record of Decision on Final EIS
4th Quarter FY 1996

Replace active non-regulated underground storage tanks at ANL-W
1st Quarter FY 1997

Complete on-site transportation compliance program
4th Quarter FY 1997

Replace active nonregulated underground storage tanks
4th Quarter FY 1997

ENVIRONMENTAL MONITORING³⁴

An important part of the overall WM program is environmental monitoring. This program allows DOE-ID to determine whether WM practices are having an adverse effect on the environment and, if so, how these practices might be changed to decrease or eliminate those impacts.

Environmental monitoring includes sampling and monitoring air, surface water, drinking water, nonradiological effluents, ambient radiation levels, and biotic communities.

Overview of the INEL Environmental Monitoring Programs

Extensive environmental surveillance is conducted at the INEL. Surveillance of WM facilities is integrated with the overall INEL program.

There are four components of the surveillance program. Monitoring of environmental impacts on the site, at the site boundary, and at nearby communities is performed by DOE-ID's Radiological and Environmental Sciences Laboratory. Monitoring of the Snake River Plain Aquifer, which underlies the INEL, is performed by the U.S. Geological Survey. Monitoring at INEL facilities, including WM facilities, is conducted by each respective operating contractor. Special studies are conducted in response to unusual conditions or to investigate possible improvements to the routine programs.

The data collected by these four programs are presented in annual Environmental Monitoring Reports. Environmental Monitoring Reports are prepared by the Radiological and Environmental Sciences Laboratory for off-site monitoring and for the overall INEL (not including individual facilities) and by each operating contractor for their respective facilities. They are also prepared by the U.S. Geological Survey for all groundwater monitoring. Emission data reported into the Radiological Waste Management Information System and the INEL Nonradiological Waste

Management Information System by all the INEL contractors are published annually. These reports are available at the Information Repositories.

Radiological and Environmental Sciences Laboratory Monitoring. The Radiological and Environmental Sciences Laboratory (RESL) maintains a scheduled environmental surveillance program outside facility fences on-site, as well as outside the INEL boundary, to evaluate the environmental impacts, if any, of contaminants released by INEL facilities. This is accomplished by sampling air, drinking water, surface water, soil, and foodstuffs; measuring environmental radiation; and calculating impacts based on the quantities of contaminants released.

RESL maintains a 26-station meteorological telemetry system to aid in predicting off-site concentrations of pollutants from the INEL. The National Oceanic and Atmospheric Administration also maintains weather towers at key INEL facilities and performs meteorological and air dispersion modeling for the RESL surveillance program. A wind-field model is used to predict pollutant recirculation caused by diurnal winds on the Snake River Plain. The model output is used to calculate dose commitments to off-site populations. The CAP-88 model is used to demonstrate the INEL compliance with EPA National Emission Standards for Radionuclide Emissions from DOE-ID facilities.

U.S. Geological Survey Monitoring. The U.S. Geological Survey (USGS) routinely monitors ground water quality and levels at the INEL. Radionuclide movements are traced in the Snake River Plain Aquifer and bodies of perched water. Data from this program, extending back to 1950, helps researchers track the degree of groundwater contamination. Water samples are collected at approximately 140 wells and surface water sites at the INEL and at adjacent areas outside the boundaries of the INEL to define the radionuclide content and chemical quality of groundwater entering and leaving the INEL. The type and frequency of sampling depends on disposal rates and practices and changes in the localized inflow to or outflow from the aquifer and perched ground water zones.

37. Activity Data Sheet ID-4301-EG.

Facility Monitoring. The INEL operating contractors monitor the effluents of their facilities in accordance with the type of activities at each facility. Continual environmental monitoring activities are also conducted at many INEL facilities. The results indicate very small or no impacts on the immediate environment. Monitoring activities provide complementary information to the RESL monitoring, which assesses effects on-site, outside facility boundaries, and beyond the INEL's boundary. Additional details of effluent and environmental monitoring are available in the annual Environmental Monitoring Report of the various operating contractors.

Special Surveillance Studies. The RESL conducts studies in radioecology and ecology. Examples of current studies include radionuclide movement and transport by biological media near the INEL liquid waste disposal ponds and the RWMC, plutonium speciation of pond liquids, trace elements in environmental media near the ICPP and near coal-fired generating plants, biological intrusion of subsurface waste disposal areas, and root depth of native and introduced vegetation suitable for reclamation of WM areas.

Environmental Monitoring Programs

Routine environmental surveillance is conducted at WM facilities: RWMC (including Stored Waste Examination Pilot Plant), WERF, and two completed the INEL decontamination and decommissioning projects—the Organic Moderated Reactor Experiment and the Stationary Low-Power Reactor. Airborne particulates, surface water, soil, plants, and animal tissues are collected and analyzed for radioactivity at the RWMC. Surface radiation surveys and perimeter radiation monitoring are also conducted. The extent of

surveillance at other WM facilities depends on the waste inventory and the extent of operations.

Most air and liquid monitoring is conducted by individual facilities. All contractors report data to INEL-wide databases from which annual reports are provided. Monitoring of production wells used for drinking water and monitoring for chemical constituents in waste waters have been centralized for EG&G facilities.

Environmental monitoring programs have also been established at the ICPP by WINCO. The airborne program includes monitoring emissions from vents and stacks as well as monitoring the ambient air quality. The liquid waste monitoring program includes effluent streams from the service waste, the domestic water system, and potable and production wells. Solid waste monitoring covers the volume and composition of solid wastes sent to disposal.

Dosimeter data collected by RESL and surface radiation survey data indicate radiation levels are above background near current waste disposal and storage areas at the RWMC and other WM facilities. Maximum six-month exposure as measured by RWMC perimeter dosimeters has generally decreased since 1974 because of improved practices.

Computers are used to evaluate environmental transport of radionuclides. Computer codes have been adapted to specific environmental pathways at the RWMC. One code is a simplified multipathway transport model that includes RWMC-specific environmental inputs. This model has been used to identify dominant transport pathways and indicate whether additional monitoring or modeling might be advisable.

CHAPTER 7

LANDLORD ACTIVITIES

LANDLORD ACTIVITIES

INTRODUCTION

The Landlord Program includes the support of specific facilities as well as general, common-use facilities and activities within the INEL based on legal; environmental, safety, and health; and DOE Order-driven requirements.

To ensure prudent use of INEL resources, the following objectives have been established to meet regulatory compliance, improve program management control, maintain and preserve existing strategic assets, and lower operating and maintenance costs:

- Emphasize environmental, safety, and health objectives; OSHA requirements; National Environmental Policy Act, Safe Drinking Water Act, and Clean Water Act compliance; and waste stream reduction activities.
- Enhance site and facility planning processes.
- Provide comprehensive, integrated facilities-management services for general purpose real property, real property improvements, and capital assets necessary to maintain and operate the general purpose infrastructure.
- Maintain and preserve existing assets.
- Reduce maintenance and equipment backlogs.
- Complete implementation of a comprehensive critical self-assessment program, including root cause analysis and corrective action planning.
- Maintain support of sitewide infrastructure.

- Ensure regulatory compliance in program activities.

The Landlord Program provides site support services for existing and new programs and projects instituted at the INEL. Included in the task assignments are capital construction, general purpose capital equipment, and operation activities.

Funding tables and major milestones are presented for each program described in this chapter.

FACILITY MAINTENANCE AND OPERATIONS

The Idaho Landlord Program provides general support to multiple INEL programs and facilities, and develops and implements procedures in accordance with DOE policies for facilities inspection, maintenance, repair, and replacement of general purpose real property at the INEL. The program approach is to carefully evaluate and prioritize activities and resource requirements for all landlord components. This program incorporates planning goals for consolidation/restoration of facilities and facility inspections that detail funding requirements and priorities.

The Idaho Landlord Program maintains the sitewide infrastructure through central planning, maintenance, procurement, and construction of common-use equipment, facilities, utilities, and roadways. The program also supports safety and health, environmental documentation, security, and planning and inspection activities that cannot be directly associated with a specific program.

The major facility maintenance and operations activities are as follows:

- **Project Development (Site Development Plan)**—Plans for the development of real property to support the INEL mission. This activity is accomplished through the investigation and publication/maintenance of landlord planning documents.
- **Operational Services (Other)**—Provides for various nonprogrammatic common-use activities at the INEL as part of the landlord's responsibilities. The objective of the task includes evaluation of the impact of various economic studies, enhancement of public awareness of benefits of the INEL, compliance with DOE safety regulations and standards, and on-the-job technical training at the INEL.
- **Site Maintenance Support/Planning**—Conducts general purpose facility inspections to identify deterioration and compliance issues, and to assess effectiveness of maintenance programs in compliance with DOE Order 4330.4A, "Maintenance Management."
- **DOE Order 4320.2, Capital Asset Management Process (CAMP)** — Provides for the condition assessment of DOE-ID's real property, planning analysis for the INEL's long-term mission and goals, and a uniform process across the DOE to prioritize and rank project funding requests.
- **Stores Inventory**—Maintains inventory of common-use materials and supplies for the varied programs at the INEL.
- **Safety and Health Corrective Actions**—Reduces the backlog of unfunded safety and health maintenance repair deficiencies identified through the facility inspection program, critical self-assessments, and operational inspections.
- **Environmental Monitoring**—Maintains the INEL-related meteorological measurement systems. The remediation/cleanup of eight abandoned agricultural dumpsites located near Test Area North (TAN) has also been initiated.
- **Emergency Preparedness Program**—Provides for the management, planning, and preparedness for operational emergencies at the INEL.
- **General Purpose Capital Equipment** —Provides for the purchase (through a pool concept) of the

most critical, high-impact general purpose capital equipment for multiple INEL contractors and DOE-ID.

- **General Purpose Capital Equipment Restoration and Modernization Program**—Controls the backlog of deferred equipment at a level commensurate with efficient operations and reverses the negative effects of past funding shortfalls on general purpose capital equipment inventories. Funding information for Facility Maintenance and Operations is presented in Table 7-1.

Dollars in Thousands		
Program	FY 1992	FY 1993
Maintenance and Operations	21,565	21,529

Table 7-1. Funding for Facility Maintenance and Operations.

NEW FACILITIES PLANNING

Included in the New Facilities Planning activity is the planning and resource allocation of the construction or upgrade of landlord general purpose facilities and infrastructure. Listed below are the FY 1994 Line Item Construction Projects:

- **Emergency Response Facility**—Provides a new fire station and fire fighter training facility at the Central Facilities Area (CFA) and a new fire station at the Experimental Breeder Reactor II Area.
- **INEL Medical Facility**—Provides a new CFA Medical Facility and upgrades to existing first aid stations at the TAN and the Test Reactor Area (TRA) medical facilities.

Brief descriptions of the planned outyear Line Item Construction Projects are listed below:

- **INEL Radio Communications Upgrade**—Provides for the installation of an Ultra High Frequency trunked radio system for the INEL.
- **Radiological and Environmental Sciences Laboratory**—Provides laboratory to support DOE, the Radiological and Environmental Sciences Laboratory, and the U.S. Geological Survey.

- Health Physics Instrument Laboratory—Provides a new Health Physics Instrument Laboratory.
- INEL Personnel Access Control and Security Enhancement—Provides for the replacement of the access control system for all INEL and town locations except the Idaho Chemical Processing Plant and the Naval Reactors Facility.

The INEL Landlord Program tracks and reports on all projects through the utilization of the Environmental Restoration and Waste Management Progress Tracking System. Each month the Progress Tracking System database is updated with project status regarding scope, schedule, and budget.

Milestones for New Facilities Planning

- Submit interim change control procedures to Headquarters.
- Submit annual facilities inspection report to Headquarters.
- Load Progress Tracking System (PTS) with FY baseline.
- Submit Landlord Program Management Plan to DOE-HQ.
- Incorporate earned value reporting into PTS.
- Publish Landlord Site Development Plan.
- Submit NEPA Documentation for all FY93 and FY94 Projects.
- Initiate construction of the Radiological and Environmental Sciences Laboratory replacement
3rd Quarter FY 1996
- Initiate construction on the TRA Fire and Life Safety Improvements
4th Quarter FY 1996
- Initiate construction for the Health Physics Instrument Laboratory replacement
4th Quarter FY 1996
- Initiate construction of the INEL Radio Communications Upgrade
4th Quarter FY 1996

GENERAL PLANT PROJECTS

General Plant Projects comprise an integral and essential part of the Landlord Program's effort to

support and maintain the physical infrastructure of the INEL. The Landlord Program uses General Plant Projects to perform infrastructure enhancements and modifications that can be addressed with general purpose capital construction funding and that are limited in scope (less than \$1.2M).

General Plant Projects are necessary to alter the interior arrangement or other physical characteristics of an existing property record unit so that it may be more effectively adapted to, or utilized for, its designated purpose, and to accommodate regulatory and other requirement changes. General Plant Projects are also used to convert a facility to a new functional purpose and to accomplish the erection, installation, or assembly of a new facility as well as additions, expansions, and extensions to existing facilities. Finally, General Plant Projects may be used to accomplish the complete reconstruction of a property record unit that has deteriorated or has been damaged beyond the point where its individual parts can be economically repaired.

Based on an effective system of project identification and facility planning, major projects identified for General Plant Project funding include light laboratory and office area additions; heating improvements; building and area utility renovations; environmental, safety, and health compliance issues; and site security improvements.

In addition, the following operations-funded Project Development Activities are required to support the Landlord General Plant Project construction effort:

- Project Formulation—Establishes scope, feasibility, and need for General Plant Projects. Accomplishes in-depth, detailed siting and engineering studies; extensive code and standard investigations; alternative method and layout approaches; and development of more accurate project cost estimates. Functional and operational requirements, schedules, and design criteria are developed as required precursors of the Conceptual Design Reports.
- Conceptual Design Report Development—Assures project feasibility, establishes design parameters, and develops realistic project cost estimates and performance schedules. A Request for Project Authorization

often takes the place of the Conceptual Design Report. The Quality and Management Plans are also included in this activity. A Safety Analysis is also required to assure that projects are planned so that health and safety risks are acceptable and property and the environment are protected.

- **Post-Construction Activities**—Funds the development of facility systems operating procedures, site drawing updates, facility maintenance plans and procedures, systems operational testing, and emergency plan updates for any facility affected by the project.

General Purpose Capital Construction funds are used for the following activities:

- **Title I and Title II Design**—Provides complete design of the work, including preparation of all required preliminary and final working drawings, specifications, estimates, and contract documents and assists in securing, analyzing, and evaluating bids or proposals for construction.
 - **Title III**—Includes the inspection portion of construction-related activities, including vendor data review, as-builts, and inspection of the construction contractor's workmanship, materials, and equipment.
 - **Project Management**—Manages all activities beginning with Title I and continuing through the completion of construction.
 - **Construction**—Constitutes the physical aspect of construction activities.
- Complete construction of the CFA Modular Office
1st Quarter FY 1994
 - Complete construction of the TRA Craft Shop
1st Quarter FY 1994
 - Complete construction of the TRA Utility Corridor
1st Quarter FY 1994
 - Complete construction of the TRA Modular Training Facility
1st Quarter FY 1994
 - Complete construction of the INEL Research Center Fume Hood Upgrade
1st Quarter FY 1995
 - Complete construction of the IRC Hazardous Waste Facility
1st Quarter FY 1995
 - Complete construction of the CFA Heavy Equipment Storage Facility
1st Quarter FY 1996
 - Complete construction of the CFA Technical Center Addition Upgrade
1st Quarter FY 1996
 - Complete construction of the Willow Creek Building Electrical Upgrade
1st Quarter FY 1996
 - Complete construction of the CFA Material Handlers Storage Facility
1st Quarter FY 1996
 - Complete construction of the INEL Guardhouse Upgrade
1st Quarter FY 1996
 - Complete construction of the INEL Research Center Craft Shop
1st Quarter FY 1997

Funding information for General Plant Projects is presented in Table 7-2.

Dollars in Thousands		
Program	FY 1992	FY 1993
General Plant Projects	5,770	4,980

Table 7-2. Funding for General Plant Projects.

Milestones for General Plant Projects

- Complete construction of the CFA Training Facility
4th Quarter FY 1993

INEL FIRE AND LIFE SAFETY IMPROVEMENTS

The INEL Fire and Life Safety Improvements project provides for the activities to correct fire protection and life safety code deficiencies in landlord-controlled facilities. The project consists of: (1) modifications to and replacement of underground fire water systems to meet code, capacity, monitoring, supervision, and structural requirements; (2) additions and modifications to the fire suppression systems to meet code requirements;

(3) additions and modifications to buildings and structures to meet life safety and fire codes; (4) modifications to pumping and water storage systems; and (5) upgrades to and expansion of selected facility evacuation and smoke detection alarms. Priorities are based on equivalency and maximum possible fire loss studies.

Numerous fire and life safety deficiencies have been identified through appraisals conducted by DOE-ID and EG&G Idaho fire protection personnel. Numerous code deficiencies require upgrades to provide fire walls in corridors and stairwells, new and upgraded exits, fire separation walls, new and upgraded smoke detection systems, and new and upgraded fire suppression systems. These deficiencies exist as a result of codes and standards changing, occupancies changing, functions changing, and facilities not built in accordance with national codes and standards in effect at the time of construction.

The Conceptual Design Report was initiated in FY 1989 and completed in FY 1990. Follow-on activities consisted of initiation of a Project Management Plan, completion of a fire safety equivalency study and maximum possible fire loss study, and completion of investigation reports and prioritized findings in FY 1991. Design of the construction activities began in FY 1992 and will continue through FY 1995. Design and construction for the remaining work scope will commence in FY 1993 and are scheduled for each year through FY 1996. The project will continue with incremental funding through FY 1995.

Funding information for Fire and Life Safety Improvements is presented in Table 7-3.

Dollars in Thousands		
Program	FY 1992	FY 1993
Fire and Life Safety Improvements	3,000	8,000

Table 7-3. Funding for Fire and Life Safety Improvements.

Milestones for INEL Fire and Life Safety Improvements

- Complete construction of the building alarm and water system upgrades at CFA.
4th Quarter FY 1993
- Complete Title II Design on the second portion of the project, including Title Designs on additional alarms systems, fire detection, fire suppression, and underground water system improvements.
4th Quarter FY 1993
- Complete construction on design work completed in FY 1993.
4th Quarter FY 1994
- Complete title design on remainder of identified fire and life safety deficiencies.
4th Quarter FY 1994
- Complete construction on design work developed in FY 1994.
4th Quarter FY 1994

INEL ELECTRICAL UPGRADE

The INEL Electrical Upgrade provides for activities to upgrade key portions of the high voltage power system that supplies electrical power to the entire INEL.

Upgrades consist of: (1) replacement of the aging and obsolete Supervisory Control and Data Acquisition System and related equipment in each of seven site substations; (2) replacement of six 30-year-old circuit breakers on the 138 kv loop installation of new by-pass switches to allow stable switching, by-pass, and fault interruption of the loop; (3) restoration or replacement of deteriorated concrete support throughout the seven site substations to provide reliable, solid support of the attached devices or structures; (4) replacement of existing manually controlled/operated horngap switches with new remotely and/or locally controlled switches capable of interrupting charges and magnetizing current; (5) separation of the 12.47 kv construction line from the EBR-1/RWMC line for placement on a new separate breaker to prevent a fault on one causing an interruption of the other; (6) upgrading of the CFA and Power Burst Facility (PBF) distribution system so that it can adequately supply power for the growing loads

in these areas and to prevent overloading and pole failure problems; (7) replacement of feeder conductors and transformers 8T4-1, 2, 3, 4 at the NRF substation to avert costly emergency replacement and extensive down time in the event of failure; (8) replacement of transformers 8T11-1 and 8T11-2 at the EBR-II substation with a new pair of high efficiency matching transformers designed for parallel operation; (9) construction of a new substation at the ICPP to provide for the increased capacity demanded by expanding programs; (10) restoration or replacement of sections of the 138 kv loop conductors to restore capacity and mechanical strength from damage in part due to wind-caused vibration; and (11) replacement of obsolete power system instrumentation and control devices in each of the seven substation control rooms. Although these items have been identified as the major upgrades, additional deficiencies identified during studies and design efforts will be prioritized and included in this project as funding allows.

The Conceptual Design Report was completed in FY 1991. Follow-on activities consist of completion of National Environmental Protection Agency documentation, the Project Management Plan, and design and construction. Title II Design of the INEL Electrical Upgrade will be initiated in FY 1993 and completed in FY 1994; construction will follow design and will be completed in FY 1996.

Funding information for the Electrical Upgrade is presented in Table 7-4.

Dollars in Thousands		
Program	FY 1992	FY 1993
Electrical Upgrade	80	1,000

Table 7-4. Funding for Electrical Upgrade.

Milestones for INEL Electrical Upgrade

- Complete National Environmental Policy Act documentation. Complete archeological surveys.
1st Quarter FY 1993

- Complete Title II Design
2nd Quarter FY 1994
- Complete construction
1st Quarter FY 1997

INEL SEWER SYSTEM UPGRADE

The INEL Sewer System Upgrade project provides sewage treatment plants at TAN, TRA, and CFA; extension of the main sewer to the new plant locations; replacement of existing deteriorated sewer lines or those that will not meet current code requirements; and treatment of effluent streams prior to injection into the drainage lagoons. The current sewage treatment plants were originally constructed in the early 1950s using the technology, codes, standards, and directives in effect at that time. The plants that are more than 30 years old are technologically obsolete and are operating at design capacity. These systems consist of a pump house and collection pit where pumps lift and circulate the sewage to the concrete primary treatment basin. From there the effluent flows to the secondary treatment basins (trickling filter beds), digesters, sludge drying beds, chlorination tanks, and pump lift stations, which transfer the effluent to evaporation or leaching ponds or drainage fields.

Replacement or modifications of existing sewage treatment plants will provide capacity for future growth, upgrade the system to current technology, and bring the plants into compliance with all DOE, state of Idaho, and national codes and standards. The new sewage treatment plants will use gravity flow to transfer and circulate sewage throughout the treatment process. Lift stations will be required to lift the sewage from the existing sewer mains to the lagoons.

The Conceptual Design Report was completed in FY 1990 and revised in FY 1991. Follow-on activities consist of preparation of National Environmental Policy Act documentation, initiation of the Project Management Plan, completion of the TAN radiological survey, completion of the Best Available Technology analysis, and completion of characterization studies in FYs 1990, 1991, and 1992. Definitive design of the sewage treatment plants will be completed in FY 1993 with the construction subcontract to follow in FYs 1993 through 1995.

Funding information for the Sewer System Upgrade is presented in Table 7-5.

Dollars in Thousands		
Program	FY 1992	FY 1993
Sewer System Upgrade	2,100	3,700

Table 7-5. Funding for Sewer System Upgrade.

Milestones for INEL Sewer System Upgrade

- Complete Title Design on Sewage Treatment Plants.
2nd Quarter FY 1993
- Complete construction and project closeout activities.
4th Quarter FY 1995

INEL TRANSPORTATION COMPLEX

The INEL Transportation Complex will centralize all INEL vehicle and equipment repair shops and operations/administrative offices under one roof. The facility, which will consolidate functions presently being performed in six of the seven major transportation-operations buildings now used at the CFA, will include a light truck and auto repair shop, bus and heavy equipment shop, body shop, brake repair shop, paint booth, washing and cleaning area, tire repair area, fuel dispensing facility, parts issue and storage area, conference room, training room, lunch room, driver ready room, used oil collection facility, administrative offices, and restrooms. Standard utilities such as water, sewer, and power will be provided, along with access roadways and parking.

The INEL Transportation Complex will be constructed at the CFA. The facility will require approximately 13 acres and will include an approximately 84,000 square foot building. The proposed facility has been sized to accommodate workloads that are currently being accomplished on overtime and backshifts and to provide capacity for projected expansion of outyear maintenance requirements. Special requirements will include underground fuel and lubricant storage, vehicle lifts, a fire protection system, and an efficient discharge collection and sampling system.

The Conceptual Design Report was completed in FY 1991. Follow-up activities consist of completion of National Environmental Policy Act documentation, completion of a Project Management Plan, and value engineering studies. Definitive design of the INEL Transportation Complex started in FY 1992 and will be completed in FY 1993 with the construction to follow in FY 1994.

Funding information for the Transportation Complex is presented in Table 7-6.

Dollars in Thousands		
Program	FY 1992	FY 1993
Transportation Complex	895	5,860

Table 7-6. Funding for Transportation Complex.

Milestones for INEL Transportation Complex

- Complete Title II Design
3rd Quarter FY 1993
- Complete construction and project closeout activities.
4th Quarter FY 1995

CHAPTER 8

TECHNOLOGY DEVELOPMENT

TECHNOLOGY DEVELOPMENT

INTRODUCTION

Assumption

Remediation waste sampling, treatment, storage, and disposal technology capability and capacity will be available to achieve cleanup requirements meeting FFA/CO enforceable deadlines and to satisfy Waste Management demands.

DOE-ID realizes that current technologies will not resolve all ER and WM problems at the INEL. The Technology Development organization has been established, under the DOE-HQ Office of Technology Development, to address and help resolve these problems. Technology Development's objective is to rapidly develop, demonstrate, and transfer needed technologies to ER and WM. These technologies will be used to minimize the toxicity and volume of waste generated by DOE-ID; manage unavoidable waste more effectively and safely; accomplish faster, better, and safer remediation of existing waste problems; and produce safe, permanent disposal of waste compliant with regulations.

DOE uses an extensive research development, demonstration, testing, and evaluation approach to move technologies from the conceptual stage to the laboratory and, finally, to the demonstration stage. Technology Development at the INEL is charged with the following:

- Collaborate with ER and WM in the definition of the waste problems and associated technology needs.
- Develop usable technologies that address DOE-ID as well as DOE complex-wide ER and WM needs.

- Collaborate with the private sector, universities, other DOE field offices, and other government agencies to enhance the conduct of research development demonstration, testing, and evaluation in a timely and cost effective manner.
- Maintain a current inventory of commercially proven and potential technologies for application by ER and WM.
- Facilitate the transfer of technologies for ER and WM from the private sector to DOE and from DOE to the private sector.

DOE-ID has ongoing research and development activities in ER and WM operations that are specific to the INEL. Many activities are also applicable to other DOE facilities. Several areas of applied research technology demonstration are presently taking place at the INEL, including the Buried Waste Integrated Demonstration, waste minimization, site and waste characterization, waste retrieval and treatment, waste remediation, and development and support of educational programs.

BURIED WASTE INTEGRATED DEMONSTRATION

The INEL was chosen by DOE-HQ as the host for the Buried Waste Integrated Demonstration Program due to the large quantity and wide variety of buried waste at the Radioactive Waste Management Complex (RWMC). The Buried Waste Integrated Demonstration involves participants from other DOE sites, universities, and private industry all working to identify and develop advanced technologies. The results of the demonstration will benefit private sector, other DOE, and other governmental agency ER

programs, thereby lowering the cost to the taxpayer.

Thermal Processing

Thermal Processing technologies are key elements for processing waste and contaminated soil. System design studies will be performed to determine the most applicable thermal treatment units. Thermal treatment processes involve a wide variety of technologies that use high temperatures to treat waste. These processes include microwave systems, plasma furnaces, and joule heated glass melters. The high temperatures achieved in these processes destroy many hazardous organic compounds and produce a solidified product with low leachability that immobilizes any remaining hazardous materials.

Engineering laboratory-scale test facilities are in operation at the INEL to investigate both ex situ and in situ thermal treatment and vitrification technologies.

Advanced Characterization Technologies

Characterization Technologies are critical for the identification of site and waste boundary locations and characteristics. Technologies that are being investigated at the INEL include magnetics, electromagnetics, high-density geophysical measurements, and advanced data-fusion techniques to image the subsurface.

Radiological and Hazardous Material Measurement

Radiological and Hazardous Material Measurement systems capable of identifying and quantifying the radiological and hazardous material in the nuclear waste at the RWMC are in development at the INEL and elsewhere in the DOE complex.

Other Technologies

The Buried Waste Integrated Demonstration program is developing an extensive plan for identifying existing and emerging technologies that may have application for remediating RWMC or other DOE buried-waste sites and demonstrating them at the INEL. Some technologies in the early stages of investigation include biological destruction

of nitrates and use of ice electrodes to remove heavy metals from soil.

WASTE MINIMIZATION

Waste minimization methods are used to reduce the quantity and toxicity of waste generated from DOE processes through process changes, substitutions, and segregation. Waste minimization activities involve technology development associated with new processes. These methods are applied to minimize the generation of waste rather than treating a waste after it has been created.

Solvent Utilization Handbook

The Solvent Utilization Handbook project developed an electronic handbook containing guidelines for the selection of potential solvent substitutes. Information in this handbook includes cleaning performance, corrosion, flashpoint, test methodology, and test conditions. It provides a resource for selection of nonhazardous or less-hazardous solvents for DOE and industrial use, thereby eliminating some hazardous solvent waste streams.

Volatile Organic Compounds

The Volatile Organic Compounds project identifies and measures volatile organic compound emissions from alternative solvents used in production and maintenance operations. Specific components of the solvents are being identified and will be useful in identifying methods of controlling the component products and by-products to prevent release of volatile emissions. Identification of the specific volatile compound will be helpful in designing the required containment strategies.

Alternative Paint Strippers

The Alternative Paint Strippers project tests and selects low-toxicity, environmentally safe solvents and processes for paint stripping operations at DOE and Department of Defense facilities.

Solvent Recycle/Recovery

The Solvent Recycle/Recovery program identifies and tests available technologies to recover and recycle solvents used in production and maintenance operations. Distillation is the most common technique for solvent recovery. Many solvent substitutes are not single-component systems, and some of the constituents may be consumed in cleaning or paint stripping operations. Economic solvent substitution will require that these solvents be recycled or recovered. Examples of the technologies being evaluated include distillation, reverse osmosis, gel permeation chromatography, molecular sieves, and chemical separation.

SITE AND WASTE CHARACTERIZATION

In Situ Secondary Ion Mass Spectrometry Analysis

The In Situ Secondary Ion Mass Spectrometry Analysis program is designed to develop both laboratory-based and, ultimately, field-based (van mounted) chemical analysis systems that take advantage of new technology developed at the INEL. Sample materials that were previously impossible or extremely difficult to analyze can now be easily and quickly analyzed using Secondary Ion Mass Spectrometry. This three-year program is structured to demonstrate the utility of these new techniques for specific applications of interest to ER and WM and to develop a field-portable instrument. Using the new technology incorporated into this instrument, insulating surfaces such as filters, vegetation, rock, and debris can be analyzed for specific contamination in 5 to 10 minutes. This greatly reduces the cost of analyzing samples, makes it possible to analyze more samples, and does not result in the generation of any additional waste materials during the analysis. The analyses will be for chemical species adsorbed or captured on surfaces of filters, smears, plant leaves, rocks, and other surfaces that may adsorb pollutants. It is anticipated that a major application will be determining the extent of pollution plumes.

Robotics Laboratory Automation

The purpose of the Robotics Laboratory Automation task is to demonstrate technologies that address the two current bottlenecks in sample analysis: sample preparation and data interpretation. Automation will increase analytical laboratory productivity and reduce personnel exposure to hazardous substances. One objective is to design, demonstrate, test, and evaluate the Standard Laboratory Modules and Standard Analysis Methods. This will be done by automating EPA sample preparation methods.

A long-term goal is full automation of the required analytical characterization techniques. The concept is to design complete instrumentation packages that can be delivered to the waste site for on-site characterization. This speeds the characterization process; reduces waste generation associated with sampling, preparation, and analysis in a laboratory; and provides consistent and accurate data. The approach recommended by a DOE laboratory automation study group calls for the development of automated laboratory systems to perform Standard Analysis Methods according to standard specifications. The system would receive a sample and produce interpreted analytical data as output while automatically maintaining the necessary records for quality assurance and quality control.

Robotics for Underground Storage Tanks

Within the DOE complex are hundreds of underground storage tanks that will require remediation during the coming decades. Most of these tanks are out-of-compliance with current environmental regulations. Because of the high radiation levels at the surface of these tanks and the chemical hazards present it is mandatory to perform all remediation operations remotely. In addition, because of the large volumes of waste that must be processed it is desirable to introduce automated remote operations wherever practical. The application of robotic systems to remediation of underground storage tanks offers opportunities for safer, faster, and cheaper solutions over the duration of these massive cleanup projects.

Currently available commercial robotics technology is not adequate for the tasks and environments involved in many of the environmental cleanup activities. While technology exists in the federal laboratories, industry, and universities that

generally supports needs in ER, very little of this technology is directly applicable to ER and WM tasks and environments. Therefore, it is necessary for DOE to develop the system modifications and adaptations, technology advances, and technology integration required for ER and WM applications. The strong foundation of robotics technology that already exists will be leveraged to effectively and efficiently prepare the robotic systems required for the ER and WM Robotics Technology Development Program.

In support of the environmental remediation of underground storage tanks, certain technologies must be further developed, evaluated, and/or demonstrated before they can be accepted for actual use. This task addresses the development of robotics technology at the INEL to meet the requirements for inspection, characterization, and waste retrieval of the underground storage tanks located at the Hanford Site (in Richland, Washington) and at the INEL. These developments also have application at other sites where similar waste-storage scenarios exist. This task will be performed as an integral part of an inter-laboratory coordinated effort to provide technology support coupled with commercially available equipment and processes to near-term demonstrations requiring modest development.

Buried Waste Robotics

The Buried Waste Robotics Program, in cooperation with the Buried Waste Integrated Demonstration, will identify, develop, and demonstrate robotics technologies that will support the environmental remediation of buried waste, including all forms of subsurface contamination: waste disposed of in pits and trenches, waste stored on pads and covered with soil, contaminated soil, and underground piping.

The lead laboratory for the Buried Waste Robotics program is the INEL, whose primary role is to integrate the work performed at each of the participating laboratories (Lawrence Livermore National Laboratory, Oak Ridge National Laboratory, Pacific Northwest Laboratories, Sandia National Laboratories, and Westinghouse Hanford Co.) into a successful demonstration using program management functions. Other activities include development of remote sizing equipment for

digface operations and sensor enhancement for remote characterization.

The three primary areas of emphasis for work to be accomplished under the Robotics Technology Development Program in support of buried waste remediation are: (1) buried waste characterization; (2) remote sizing to support waste preprocessing; and (3) buried waste/soil retrieval.

Within characterization a Low Signature Vehicle will be developed, led by Pacific Northwest Laboratories, which will be used to deliver multiple integrated sensors to a buried waste site. Remote emplacement of sensors will also be demonstrated to characterize waste forms. The primary INEL tasks are interfacing with the Buried Waste Integrated Demonstration and developing an advanced magnetometer sensor for deployment on the Low Signature Vehicle.

Remote size-reduction capabilities demonstrated in FY 1991 as part of waste preprocessing will be enhanced. The enhancements will consist of the addition of a multiaxis delivery system for the manipulator.

Robotics for Decontamination and Decommissioning

Robotic technologies in support of decontamination and decommissioning activities will be developed that can be applied to ER and WM to improve the safety and cost effectiveness of future decontamination and decommissioning projects. This can be accomplished by removing humans from hazardous conditions and increasing the speed, reliability, and performance associated with typical decontamination and decommissioning tasks. The INEL has three principle tasks associated with this effort: (1) integrating remote plasma arc cutting for size reduction; (2) supporting detailed planning of decontamination and decommissioning activities; and (3) supporting the preliminary design of an integrated robotic decontamination and decommissioning system.

WASTE RETRIEVAL AND TREATMENT

Waste Retrieval and Treatment technology focuses on the treatment of active waste streams and waste resulting from WM operations. This technology includes additional treatment of stored waste before disposal but does not include the treatment of contaminated soils and groundwater resulting solely from remediation.

Bioprocessing of Mixed Wastes

The Bioprocessing of Mixed Wastes Program will develop and demonstrate biologically based treatment technologies for the remediation and/or volume reduction of mixed and low-level wastes. Early efforts are being directed toward laboratory experiments on nonradioactive "synthetic" wastes, which mimic actual wastes. These experiments will separate heavy metals, transuranic radionuclides, and other components via bioaccumulation and biological degradation of the hazardous fraction.

Supercritical Water Oxidation

The Supercritical Water Oxidation effort will provide evaluation of the viability of supercritical water oxidation technology for removing the organic component of mixed waste. This effort will include surveying candidate DOE waste streams and executing a carefully planned test matrix with surrogate wastes in an existing 30-gallon/day unit in Framingham, Massachusetts, to determine applicability, performance data, safety data, and other testing data necessary for DOE to successfully procure an appropriately sized mixed waste unit. The initial target for application of this technology to mixed waste will be plutonium-contaminated cutting oils at the Rocky Flats Plant.

High-Energy Decomposition of Halogenated Hydrocarbons

The High-Energy Decomposition of Halogenated Hydrocarbons project demonstrates a process for breaking down halogenated organic hazardous wastes—such as polychlorinated biphenyls (PCBs), pesticides, and volatile organic compounds—to simple nonhazardous compounds using high-energy ionizing radiation. This project is a joint collaborative effort with Lawrence Livermore

National Laboratory, which is using a transportable linear accelerator as the energy source. The INEL is using spent nuclear fuel as the energy source.

High-Level Waste Technology Development

The High-Level Waste Technology Development Program performs research and development on high-level waste to immobilize it for disposal. This program is identifying technologies for treating, reducing, and immobilizing high-level waste in a form acceptable for disposal at an approved geologic repository.

WASTE REMEDIATION

DOE-DOD Two-Dimensional Bar Coding

The INEL will investigate new two-dimensional bar coding symbologies with the intent of developing a proof-of-concept application focused primarily on the area of WM. A selected two-dimensional symbology recently developed and identified as Portable Data File (PDF-417) will be evaluated by creating a test environment in parallel with an existing one-dimensional bar coding application and performing detailed examinations of the capabilities and limitations of the two-dimensional symbology. It is the intent of the project to make a final recommendation for use of a standard two-dimensional technology for use in Defense Department and DOE applications.

High-Level Waste Technology Development and Process Verification

As proposed in the Defense Waste Management Plan, a program is ongoing at the INEL to provide the technical bases for establishing a reference strategy and technology for the final disposal of high-level waste at the INEL in an approved federal repository.

Three main alternatives for permanent fixation of waste currently generated or stored at the INEL are being evaluated. The preferred option involves waste immobilization as a glass-ceramic in canisters, with final disposal at an approved federal repository. A second alternative is to provide on-site immobilization through calcine in-place stabilization, requiring additional calcine bin sets. The third alternative is a combination of the first two, with repository disposal of newly generated

high-level waste and in-place stabilization of existing calcine. The INEL program is anticipated to lead to a preferred immobilization concept by FY 1994 and a process verification facility by FY 2002.

DEVELOPMENT AND SUPPORT OF EDUCATIONAL PROGRAMS

Educational programs include activities enhancing the availability of knowledge and human resources to solve ER and WM problems, such as teacher training, student training, joint university/DOE research partnerships, and outreach activities for minorities and the educationally disadvantaged.

Science Education

The Science Education Program's purpose is to increase the number of students, particularly students with minority and disadvantaged backgrounds, who pursue science and mathematics studies in school and who ultimately choose scientific and technical careers. It also provides professional development opportunities for the teachers who directly interact with and influence students' attitudes toward the sciences and other professional disciplines.

Environmental Restoration and Waste Management Education

Students and teachers in primary and secondary school systems are provided with opportunities to improve the quality of science and engineering

education through the ER and WM Education Program. DOE manages educational programs directed to junior and vocational colleges, four-year colleges, and universities. These programs exist to increase the number of ER and WM professionals graduating from higher educational institutions. Joint activities between the INEL and educational institutions include personnel exchanges, collaboration on research and educational programs, and summer employment.

OTHER ACTIVITIES

Innovative Technology Development

The Innovative Technology Development Program was established as a part of DOE's Applied Research, Development, Demonstration, Testing, and Evaluation Plan. The plan is part of DOE's program to restore sites affected by weapons production and to upgrade future WM operations. The Innovative Technology Development Program is based on the premise that conventional methods for many of the ER and WM problems have marginal benefit, are costly and time consuming, and may not reduce the possibility of future problems. The program is charged with finding technologies that are presently beyond the frontiers of science and engineering and evaluating them through the proof-of-concept stage. The program evaluates high-risk technologies, substantially increasing the potential to advance the level of state-of-the-art technologies. If successful, these visionary projects will make revolutionary changes in the practices of ER and WM.

CHAPTER 9

ENVIRONMENTAL IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT ASSESSMENT

INTRODUCTION

The National Environmental Policy Act (NEPA) directs all federal agencies to give appropriate consideration to the potential environmental impacts resulting from proposed major actions that may significantly affect the quality of the human environment. NEPA regulations further stipulate that agencies must make diligent efforts to involve the public in their NEPA procedures.

NEPA evaluations must be made early in the planning process to ensure that environmental effects and values are considered in agency decision-making and to avoid project delays. As early as possible, activities planned at the INEL are assessed for potential environmental impacts pursuant to the provisions of NEPA and applicable implementing rules. A proposed action can be categorically excluded or require an Environment Assessment or an Environmental Impact Statement (see Figure 9-1). A listing of the NEPA requirements and anticipated schedule and level of documentation is included as Appendix E.

Environmental restoration activities are specifically regulated by the provisions of the Comprehensive Environmental Response, Compensation, and

Liability Act (CERCLA), as amended, also known as "Superfund." CERCLA requires extensive planning and risk-assessment documentation similar to that prepared under NEPA. CERCLA establishes a process where all applicable or relevant and appropriate requirements are considered as part of the cleanup. As a matter of DOE policy, environmental restoration compliance activities at the INEL will employ an integrated NEPA and CERCLA documentation approach wherever feasible to ensure that NEPA is factored into the CERCLA decision-making process with minimal paperwork and expenditure of tax dollars.

DOE-ID is preparing an INEL Environmental Restoration (ER) and Waste Management (WM) Environmental Impact Statement that will include analysis of INEL-wide activities in terms of cumulative impacts. This EIS will cover the WM and decontamination and decommissioning efforts of existing facilities at the INEL as well as ongoing environmental cleanup, spent fuel management, technology development, and site infrastructure functions (e.g., roads, power, fire protection, security). The Environmental Impact Statement will provide a broad-based ER and WM NEPA document from which subsequent INEL NEPA documents can be developed.

Figure 9-1. The NEPA Process.

ENVIRONMENTAL ASSESSMENTS

An Environmental Assessment is a concisely written public document that is used to evaluate whether potential environmental impacts will be significant. The Environmental Assessment can result in a Finding of No Significant Impact, or a decision may be made to prepare an Environmental Impact Statement to further evaluate potential impacts. The Environmental Assessment serves the following purposes:

- Briefly provides sufficient evidence and analysis for determining whether to prepare an

Environmental Impact Statement or a Finding of No Significant Impact;

- Aids DOE compliance with NEPA when an Environmental Impact Statement is not determined to be necessary;
- Facilitates preparation of an Environmental Impact Statement when one is determined to be necessary; and
- Briefly discusses the need for the proposed action, alternatives to the proposed action (including no action), and environmental consequences of the proposed action and alternatives, and lists the agencies and persons consulted.

If DOE determines that Environmental Assessments are required for proposed actions, they will be prepared following prescribed NEPA format and content guidelines. Where a remedial action governed by CERCLA may trigger NEPA procedures, DOE's policy is to integrate NEPA into CERCLA documentation. A determination will then be made whether to issue a Finding of No Significant Impact or to proceed with the preparation of an Environmental Impact Statement.

ENVIRONMENTAL IMPACT STATEMENTS

An Environmental Impact Statement is a detailed assessment of the potential impacts of a proposed action. The Environmental Impact Statement is much like an Environmental Assessment, but includes a more in-depth discussion of possible alternatives to and environmental impacts associated with the proposed actions. The public is invited to comment and participate in the scoping and technical reviews of Environmental Impact Statements. An INEL ER and WM Environmental Impact Statement is being prepared to address actions such as ongoing and planned ER and WM activities; alternatives for waste, treatment, storage, and disposal facilities; and infrastructure support activities. DOE-HQ is also preparing a Programmatic Environmental Impact Statement that will cover issues such as minimum versus maximum consolidation of treatment, storage, and disposal alternatives for all DOE system wastes.

Public Involvement

DOE-ID follows the Council on Environmental Quality guidelines for public involvement in the Environmental Impact Statement process. Once DOE determines an Environmental Impact Statement is required for a proposed INEL action, DOE-ID prepares and publishes a Notice of Intent describing the proposed action and declaring an intent to hold one or more scoping meetings for the Environmental Impact Statement; the times and locations for such meetings will also be specified. Participants at the scoping meetings are encouraged to raise and discuss relevant issues that relate to the proposed action. Written comments on the scope of the proposed Environmental

Impact Statement are also solicited and considered in determining the final scope of the Environmental Impact Statement. The issues raised during scoping meetings are then refined and alternatives to the proposed action identified for examination in the Environmental Impact Statement.

The actual analysis begins with information gathering and data analyses. The results of these studies are then presented in a draft Environmental Impact Statement that is issued to the public, affected Indian Nations, other federal agencies, and state and local governmental organizations. The public, Indian Nations, and respective agencies will have a minimum of 45 days in which to comment on the draft Environmental Impact Statement. A minimum of one public hearing is held on the draft Environmental Impact Statement to receive verbal comments.

After the close of the public comment period on the draft Environmental Impact Statement, DOE-ID considers all written and verbal comments received. The final Environmental Impact Statement is then prepared, reflecting any changes that result from public and agency review comments. The final Environmental Impact Statement also will contain DOE-ID responses to comments made on the draft Environmental Impact Statement. Following issuance of the final Environmental Impact Statement, DOE prepares and publishes a Record of Decision in the *Federal Register* regarding its decision on the proposed action.

PLANNED ENVIRONMENTAL IMPACT STATEMENTS

DOE-HQ Programmatic Environmental Impact Statement

DOE-HQ is presently preparing two nationwide Programmatic Environmental Impact Statements: the Defense Program Reconfiguration Programmatic Environmental Impact Statement and the Environmental Restoration and Waste Management (EM) Programmatic Environmental Impact Statement.

In the Reconfiguration Programmatic Environmental Impact Statement, DOE proposes to reconfigure the Nuclear Weapons Complex to

be smaller, less diverse, and less expensive. Since the issuance of the Notice of Intent and the Implementation Plan, changes in world events have shown that there may no longer be a need for the weapons complex as proposed. As such, some of the decisions to be made by this Programmatic Environmental Impact Statement will be deferred. Since the INEL is being considered and may be affected by the outcome of this Programmatic Environmental Impact Statement, it may be necessary to supplement the INEL EIS after the Reconfiguration Programmatic Environmental Impact Statement Record of Decision is signed.

The purpose of the EM Programmatic Environmental Impact Statement is to formulate and implement an integrated ER and WM program and establish overall ER and WM objectives; i.e., remediation options, consolidated versus regional versus multiple waste sites, and spent fuel storage and/or treatment locations.

INEL ER and WM Environmental Impact Statement

The INEL ER and WM Environmental Impact Statement is needed to establish a current environmental baseline and to evaluate the environmental impacts of DOE's near-term (5-10 years) initiatives for ER and WM programs. This Environmental Impact Statement will analyze the impacts of a range of alternatives for the ER and WM programs (including decontamination and decommissioning and spent nuclear fuel management) and the infrastructure necessary to support the alternatives being considered. The Environmental Impact Statement will be evaluated and supplemented, as necessary, as DOE policies and programmatic decisions are made.

ENVIRONMENTAL RESTORATION ACTIVITIES AND NEPA

Most cleanups at the INEL will be carried out through the CERCLA Remedial Investigation/Feasibility Study process. The results of this study will be documented in a Remedial Investigation/Feasibility Study report and will lead to the identification of a preferred remedial alternative in a Proposed Plan prepared jointly by DOE, the EPA, and the state of Idaho. The Proposed Plan will then be circulated for public review and comment and will be presented at one or more public meetings to be held during the public comment period. After consideration of the public's comments, a final remedial action decision will be made and documented in a Record of Decision. Several Remedial Investigation/Feasibility Studies are anticipated to be conducted at the INEL, each focusing on a physically distinct area of the site.

To ensure consideration of NEPA in connection with ER activities at the INEL, documents produced and procedures followed in the CERCLA process (the Remedial Investigation/Feasibility Study process) will be supplemented as needed to assure that NEPA is incorporated. It is anticipated that most remedial action activities will not result in a significant impact to the environment. For all remedial action activities, NEPA considerations will be provided in appropriate CERCLA documentation where feasible. Public involvement and notification as provided in the CERCLA process will take place throughout the entire remedial action process and will meet the minimum requirements that NEPA would otherwise provide.

CHAPTER 10

QUALITY ASSURANCE

QUALITY ASSURANCE

INTRODUCTION

During the past decade, unreliable products, employee apathy, budget concerns, and shrinking profits have forced many industries to re-examine their policies, goals, and general approach to doing business. Almost universally, modern industry has begun to recognize that it must reach beyond the traditional quality assurance mindset, in which one independent organization was assigned the sole responsibility for examining a pre-specified percentage of completed work products to determine the extent to which they complied with all requirements (the audit checklist/white glove mentality). Now all organizational personnel—the management, workers, and those who assess the quality of the work—must share the responsibility for carrying out the organization's mission of producing work products and services that can be proven to meet not only customer requirements but customer expectations as well.

DOE-ID has embraced this new philosophy for doing business, and has revised its policies and standards to require that all employees and contractors implement the quality assurance program, ensuring that hazards are minimized and that safety and reliability are maximized. Specifically, in 1990, DOE initiated the new quality assurance "culture" by promulgating DOE Order 5700.6C, "Quality Assurance," which redirected the DOE's quality assurance philosophy from one of "documented compliance with all specified requirements" to one more performance-oriented, placing emphasis on work results and the continuous improvements of the quality of the products and services provided by DOE.

WHAT IS QUALITY?

In very simple terms "quality" can be considered as the degree to which an item, process, or service meets or exceeds the customer's requirements and expectations. Quality Assurance constitutes those actions that when carried out provide confidence that quality has been achieved. A quality assurance program is a documented program established by an organization that identifies the quality standards and the specific responsibilities and activities of personnel to ensure that the items or services produced by the organization are planned and completed in such a manner that the quality standards are consistently met and the customer is satisfied.

A quality assurance program is a total management system involving all organizational components in which the work performed is considered a process that is to be carefully planned, performed, assessed, and continuously improved.

DOE'S QUALITY ASSURANCE PROGRAM

DOE's goal is to achieve continuous improvement. This requires a culture that encourages setting and maintaining high standards, identifying and resolving problems, accepting recommendations for improvement, and fostering mutual respect and effective communication between DOE and its contractors. Both DOE and contractor management are responsible to not only comply with a minimal set of requirements (compliance-based orientation) but also to continuously pursue improvements to safety and

reliability (performance-based orientation). Today quality is defined in terms of satisfying the customer (the regulators and public) in the most resource-efficient manner.

Senior management provides workers with the information, tools, support, and encouragement to properly perform their assigned tasks. They define the requirements; train, motivate, and empower personnel; and assess performance. Finally, they are expected to demonstrate commitment and leadership to achieve quality through active involvement in the implementation of an effective quality assurance program. The individual's role is to meet the quality requirements and to recommend improvements in item and process quality. This format permits managers, workers, and the personnel assessing the planning, implementation, and results of the work to focus on their unique responsibilities to carry out the provisions of the quality assurance program.

The application of a quality assurance program's basic requirements extends from planning the conduct of basic and applied research, scientific investigations, and engineering design to operations, maintenance, and repair of facilities and, ultimately, to environmental restoration. In structuring the organization and assigning responsibilities, DOE recognizes that quality assurance is an interdisciplinary function involving many organizational components, and that achieving quality is the responsibility of people throughout the organization, from the top executives to line workers, including designers, scientists, engineers, welders, inspectors, researchers, operators, craftsmen, and auditors.

The concept that an organization's quality assurance program represents a total management system is the underlying framework for DOE Order 5700.6C. The tenets listed below represent requirements that are woven throughout the control elements of Order 5700.6C.

Senior Management Ownership – Senior management must take full ownership of the quality assurance program

Senior management should establish policies and objectives focused on achieving the organization's mission while improving the quality of the organization's products and services. An atmosphere must be created that promotes quality and the improvement of quality throughout the entire organization.

Line Organization Responsibility – People who perform the work have the greatest knowledge of the item or process and the greatest affect on item or process quality

Individual employees should seek ways to improve the quality of their work. Individuals determine directly the extent to which management's objectives are met.

Graded Approach – Not all items, processes, and services have the same effect on safety and reliability

The rigor with which the individual elements of the quality assurance program are applied should be based on the risk associated with the work: the graded approach. Because risk is a fundamental consideration in determining to what extent the quality assurance program should be applied to items and processes, more discussion is provided below on the role risk plays in establishing DOE's quality assurance program (see Implementation, below).

Training and Qualification – Every person must be capable of doing his job

All personnel, including managers, should receive the appropriate training to ensure that they are capable of adequately performing their assignments.

Cost and Schedule – Managers must take into account resource considerations such as cost and schedule to achieve quality in their products and services

Resource considerations should be an integral part of management's planning and decision-making process.

Quality Improvement – Problem prevention is more desirable than problem correction

DOE and contractor management are responsible for continuously pursuing improvements to their products and services—not just complying with the minimum requirements. Process and product problems should be identified, documented, and corrected with the goal of promoting higher levels of quality. Everyone must strive to find new and innovative ways to continually improve the quality of products and services.

Effective Assessment – DOE's assessment program consists of worker and management self-assessments, as well as independent assessments

As work is performed, workers should critically assess their efforts and determine whether they have met management's objectives. Management assessments identify, correct, and prevent management problems that hinder the achievement of the organization's objectives. Independent assessments expand on the traditional audit techniques by including a variety of evaluation tools that allow independent-assessment personnel to focus on issues that affect the organization's performance. Independent-assessment personnel act on behalf of, and as advisors to, senior management. Personnel performing assessments should be technically qualified and performance-oriented.

Quality Results – A measure of success of an organization is the quality of the products and services that it provides

From the performance-based perspective, the quality of the product and service, rather than rigorous quality assurance programs, procedures, and documentation, is the organization's primary measure of success.

DOE ORDER 5700.6C

DOE Order 5700.6C contains 10 basic quality control elements or criteria that are grouped into three categories: Management, Performance, and Assessment.

Management**Criterion 1 – Quality Assurance Program:**

Organizations shall develop, implement, and maintain a written Quality Assurance Program. The Quality Assurance Program shall describe the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing adequacy of work. The Program shall also describe the management system, including planning, scheduling, and cost-control considerations.

Criterion 2 – Personnel Training and

Qualification: Personnel shall be trained and qualified to ensure that they are capable of performing their assigned work. Personnel shall be provided continuing training to ensure that job proficiency is maintained.

Criterion 3 – Quality Improvement: The organization shall establish and implement processes to detect and prevent quality problems and to ensure quality improvement. Items and processes that do not meet established requirements shall be identified, controlled, and corrected. Correction shall include identifying the causes of and preventing recurrence of problems. Item reliability, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items and processes needing improvement.

Criterion 4 – Documents and Records:

Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design. Records shall be specified, prepared, reviewed, approved, and maintained.

Performance

Criterion 5 – Work Processes: Work shall be performed to established technical standards and administrative controls. Work shall be performed under controlled conditions using approved instruction, procedures, or other appropriate means. Items shall be identified and controlled to ensure their proper use. Items shall be maintained to prevent their damage, loss, or deterioration. Equipment used for process monitoring or data collection shall be calibrated and maintained.

Criterion 6 - Design: Items and processes shall be designed using sound engineering/scientific principles and appropriate standards. Design work, including changes, shall incorporate applicable requirements and design bases. Design interfaces shall be identified and controlled. The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work. Verification and validation shall be completed before approval and implementation of the design.

Criterion 7 - Procurement: The organization shall ensure that procured items and services meet established requirements and perform as specified. Prospective suppliers shall be evaluated and selected on the basis of specified criteria. The organization shall ensure that approved suppliers can continue to provide acceptable items and services.

Criterion 8 - Inspection and Acceptance Training: Inspection and acceptance training of specified items and processes shall be conducted using established acceptance and performance criteria. Equipment used for inspections and tests shall be calibrated and maintained.

Assessment

Criterion 9 - Management Assessment: Management at all levels shall periodically assess the integrated quality assurance program and its performance. Problems that hinder the organization from achieving its objectives shall be identified and corrected.

Criterion 10 - Independent Assessment: Planned and periodic independent assessments shall be conducted to measure item quality and process effectiveness and to promote improvement. The organization performing independent assessments shall have sufficient authority and freedom from the line organization to carry out its responsibilities. Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed.

IMPLEMENTATION

As discussed above, the use of the graded approach to apply the criteria of Order 5700.6C to items and processes is based on the concept of risk. Risk is the quantitative and/or qualitative expression of possible loss that considers both the probability of an event's occurrence causing harm or loss and the consequences of that event. Criteria such as the consequences and probability of failure; the relative importance of safety, safeguards, and security; the magnitude of any hazard; the programmatic mission; characteristics of the facility; the ability to demonstrate functional compliance; the quality history; the degree of standardization; the impact on the environment; and the impact on cost or schedule or both should be carefully considered. Risk-related information includes current Safety Analysis Reports, accident analysis, environmental impact reports, probabilistic risk assessments, operating readiness/safety reviews, or other appropriate studies and information.

DOE-ID, like all DOE facilities, is required to manage its facilities under a quality assurance program based on the 10 quality criteria contained in Order 5700.6C. However, national scientific and engineering laboratories such as the INEL are comprised of many diverse facilities that, at any given time, may be conducting research, performing specific operations, maintaining a WM program, or undergoing characterization for subsequent ER and decontamination and decommissioning. These facilities are managed and operated by a myriad of contractors and consultants, each with a specific scope of work. Because of the unique nature of each organization's work, the application of all quality assurance criteria will not always be appropriate.

DOE-ID has implemented the Order 5700.6C requirements by issuing a supplemental Directive ID5700.6D that clarifies, interprets, expands, and tailors the requirements to better address the operations conducted at the INEL. DOE-ID requires all DOE-ID personnel and contractors to operate under the guidance of 5700.6C and ID5700.6D when conducting official, quality-affecting work at the INEL. Specifically, a contractor must develop a Quality Assurance Program plan and implementation procedures, as

necessary, when seeking approval to perform a specific scope of work on a contract, program, project, or task. The organization developing the quality assurance program will carefully review the requirements of both Orders and provide written justification of why a particular criterion or part of a criterion is deemed nonapplicable for review and approval prior to the start of work. Once the work and quality assurance program plan is approved, the contractor is responsible for implementing the program by training their personnel and monitoring compliance on an ongoing basis. Quality assurance program activities are routinely reported to the cognizant DOE-ID manager.

DOE-ID monitors the implementation/compliance with contractor quality assurance program requirements by periodically conducting independent assessments, appraisals, and audits. These evaluations are augmented by external

assessments, such as the Tiger Team assessments. If a quality assurance program deficiency (called a finding or observation) could have an immediate and significant impact on the health or safety of workers or the public, a stop work order may be issued. Findings and observations identified by either the contractor's internal quality assurance organization or by an external group are formally documented and evaluated, a corrective action proposed, and the status of the corrective action tracked until the problem can be officially closed out by the cognizant DOE-ID manager. The adequacy of a contractor's quality assurance program can have a direct bearing on the award fees presented. As a tool for continuously improving the DOE-ID's internal management system, quarterly self-assessments are routinely conducted and reported. Line management is held accountable for the results of these self-assessments.

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GLOSSARY

GLOSSARY

accumulation point — see RCRA accumulation point.

acre-feet — The volume of water that will cover one acre (43,560 square feet) of area with one foot of water.

Activity Data Sheets (ADSs) — Informational documents containing descriptions, funding levels, schedules, and milestones for specific environmental restoration and waste management projects.

alpha-emitter — A radioactive substance that decays by releasing an alpha particle (a charged particle containing two protons and two electrons). Alpha radiation is easy to shield against because it can be stopped by a thin layer such as clothing. Alpha-emitters, however, are harmful if they are inhaled or ingested and become lodged in body tissues where the radiation can cause tissue damage and possibly cancer.

Applicable or Relevant and Appropriate Requirements (ARARs) — Requirements, including cleanup standards, standards of control, and other substantive environmental protection requirements and criteria for hazardous substances as specified under federal and state laws and regulations that must be met when complying with Superfund.

aquifer — A water-saturated rock layer or zone through which groundwater can flow in usable quantities. The Snake River Plain Aquifer flows beneath the INEL and provides groundwater for

irrigation and public water supplies throughout the Snake River Plain.

Atomic Energy Act — A law passed in 1954 that placed nuclear production and control of nuclear materials within a civilian agency, originally the Atomic Energy Commission. The Atomic Energy Commission was replaced by the Nuclear Regulatory Commission.

basalt — A hard, dense, dark volcanic rock. Basalt often has open pockets or vugs that make it extremely permeable when fractured.

beta-emitter — A radioactive substance that decays by releasing a beta particle (an electron or positron). Beta radiation is more penetrating than alpha radiation. Beta radiation, which can cause skin burns, can be stopped by a thin metal sheet. Beta-emitters, however, are harmful if they are inhaled or ingested and become lodged in body tissues where the radiation can cause tissue damage and possibly cancer.

biotechnology — The application of engineering and technological principles to the life sciences. Biotechnology uses living organisms, or parts of organisms, to produce a variety of products (from medicines to industrial enzymes) to improve plants or animals or to develop microorganisms for specific uses such as removing toxics from bodies of water or soils. Bioremediation is a biotechnology applied to environmental cleanup where microorganisms are used to digest toxic compounds into harmless by-products.

boiling water reactor — A type of nuclear reactor that uses fission to generate steam thereby driving turbines and creating electricity.

breeder reactor — A type of nuclear reactor that creates more fuel than it uses.

By-Product Rule, DOE — A DOE rule that established the DOE policy for application of the Resource Conservation and Recovery Act (RCRA) and the Atomic Energy Act to DOE waste containing hazardous components and by-product materials.

calcine — The solid materials produced by a process (calcining) that uses high temperatures to convert liquid wastes into solids without melting or fusing the solid materials.

calcining — The process of making unconsolidated powder or granules by thermal evaporation and partial decomposition of high-level waste.

certified wastes — Waste that has been characterized and inspected and is officially certified as meeting the Waste Acceptance Criteria for treatment, storage, or disposal.

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

cladding — A thin-walled metal tube that contains two or more metal layers that have been bonded together to provide greater strength and corrosion resistance. Nuclear fuels are contained in fuel rods that have outer jackets made of cladded materials. The cladding prevents corrosion of the fuel by the coolant and keeps fission products from being released into the coolant.

clean waste — Waste products that are neither radioactive nor hazardous but require appropriate disposal in a regular solid waste landfill.

closure — Deactivation, stabilization, and surveillance of a waste management unit, landfill, or other facility. Closure often refers to the process under RCRA involving the preparation and signing of a Closure Plan.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980

(CERCLA) — A federal law (also known as “Superfund”) that provides a comprehensive framework to deal with past or abandoned hazardous materials and radioactive substances at the INEL. CERCLA provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment that could endanger public health, welfare, or the environment as well as the cleanup of inactive hazardous waste disposal sites. CERCLA has jurisdiction over any release or threatened release of any “hazardous substance” to the environment. The definition of “hazardous” under CERCLA is much broader than under RCRA in that under CERCLA the hazardous substance need not be a waste. If a site meets the CERCLA requirements for designation, it is ranked along with other “Superfund” sites and listed on the National Priorities List. This ranking and listing is EPA’s way of determining which sites have the highest priority for cleanup.

confined aquifer — An aquifer that is bounded by impermeable beds or beds of a distinctly lower permeability than that of the aquifer.

Confirmed Release Site — Any Solid Waste Management Unit (SWMU) that has a confirmed release of hazardous contaminants to the environment which have a potential to migrate or further affect the environment.

Consent Order and Compliance Agreement (COCA) — A legally binding agreement signed in 1987 between the U.S. Department of Energy Idaho Field Office (DOE-ID), U.S. Environmental Protection Agency Region 10 (EPA Region 10), and the U.S. Geological Survey (USGS). This agreement applies to environmental restoration activities and requires that every area at the INEL that potentially received hazardous waste or hazardous constituents be identified and ranked according to the potential hazard. Investigation of these areas is based on the hazard ranking with the highest ranked areas being investigated first.

contact-handled waste — Waste low enough in radioactivity that it does not require shielding other

than that provided by its container in order to protect those handling it.

continuity of operations — Activities that include developing strategic and long-range waste management plans, surveillance and maintenance of facilities and equipment, waste certification, proper training programs for personnel, and record/information administration.

coolant — The material that is used to dissipate heat that is generated during some process. Many nuclear reactor types are distinguished by the type of coolant that is used (e.g., liquid metal cooled, boiling water).

core — The central portion of a nuclear reactor containing the fuel elements, materials to moderate and control the reactor, and support structures.

curie — A unit used to measure radioactivity. One curie is equal to 37 billion radioactive transformations (disintegrations) each second. One curie is also equal to the radioactivity of one gram of Radium 226.

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

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

disposal — Waste emplacement designed to ensure isolation of waste from the biosphere, with no intention of retrieval for the foreseeable future, and that requires deliberate action to regain access to the waste. Disposal may involve land-filling or other burial, emplacement in a geologic repository, underground injection, or surface impoundment.

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

dose — The quantity of energy or radiation absorbed by an individual. Usually measured in REMs (see REM).

effluent — The wastewater, treated or untreated, that flows out of a facility. Generally effluent is discharged into surface waters.

enriched uranium — Uranium that has greater amounts of the fissionable isotope (uranium 235) than occurs naturally. Naturally occurring uranium is 0.72 percent uranium 235.

Feasibility Study (FS) — A step in the environmental restoration process specified by CERCLA. The objectives of the FS are to identify the alternatives for remediation and to select and describe a remedial action that satisfies ARARs for mitigating confirmed environmental contamination. The FS is based on information provided by a Remedial Investigation (RI). Successful completion of an FS should result in subsequent development of a remedial design for implementation of the selected remedial actions.

Federal Facility Agreement and Consent Order (FFA/CO) — A binding document required by CERCLA signed by DOE-ID, EPA, and the state of Idaho to coordinate RCRA and CERCLA activities at the INEL. It is often referred to as the Interagency Agreement. To resolve the potential conflicts between the various laws and agencies, DOE-ID, EPA Region 10, and the state of Idaho have signed an Interagency Agreement to coordinate overlapping jurisdiction by different agencies. The FFA/CO supersedes the COCA. The FFA/CO outlines the remedial action process that will encompass all investigation of hazardous substances and cleanup activities at the INEL. The agreement integrates CERCLA response obligations with RCRA and HWMA corrective obligations.

FFA/CO Action Plan — A document describing how the Interagency Agreement will be implemented. It includes such things as enforceable cleanup schedules and document preparation guidance.

field offices — An administrative division of the DOE that operates facilities which are in its

jurisdiction. There are eight DOE field offices located in various cities throughout the country. The DOE Idaho Field Office (DOE-ID) is located in Idaho Falls and is responsible for most of the facilities at the INEL.

fiscal year (FY) — The time frame specified by any public or private entity to separate one year's financial (fiscal) activities from the next year's. The 1993 federal fiscal year (FY 1993) began on October 1, 1992, and will end on September 31, 1993.

fission products — Radioactive products that result from splitting a single atom into at least two other atoms releasing large amounts of energy. Fission is the process nuclear reactors use to create energy. Fission occurs when a fissionable element is bombarded with neutrons causing it to split. Fission products are the fragments of the original atom that remain, as well as the radioactive decay products that result from these fragments. Fission products are less stable (more radioactive) than the original fissionable material.

fissionable — Material that has the potential to split (undergo fission) when bombarded with neutrons. Not all elements are fissionable. Examples of fissionable elements are uranium 235 and plutonium 239. Under certain conditions, nonfissionable elements can be transformed into fissionable ones (e.g., uranium 238 can be transformed into plutonium 239 in a breeder reactor). This is how breeder reactors can make more fuel than they consume.

fuel reprocessing — The separation of usable fuel from spent fuel and other sources to recycle the fissionable products for reuse.

fusion energy — The energy released from combining hydrogen atoms to form helium (fusion). Fusion energy has not yet been harnessed to make electric power. However, it is an area of intensive research because hydrogen, the fuel source, is found abundantly in water.

gamma-emitter — A radioactive substance that decays by releasing a high-energy form of

electromagnetic radiation. Gamma radiation is much more penetrating than both alpha and beta radiation. Gamma radiation can be stopped or shielded by a dense material such as concrete or lead. Gamma radiation is harmful and can cause tissue damage and possibly cancer if the radiation source is not properly shielded or if a gamma-emitter becomes lodged in body tissue.

geological repository — A mined facility for disposal of radioactive wastes that uses natural geologic barriers to provide waste containment over geological time scales.

geothermal energy — The energy available from natural sources of heat such as hot springs and near-surface heat sources in volcanically active areas.

Greater-Than-Class-C waste — Low-level radioactive waste that is generated by commercial firms for DOE nondefense programs and exceeds Nuclear Regulatory Commission concentration limits for Class C low-level waste as specified in 10 CFR 61. DOE is responsible for the disposal of Greater-Than-Class-C wastes.

groundwater — Water that is located in a saturated zone below the land's surface in the spaces between soil grains, in fractures, or in porous formations.

grouting — Grouting is a waste stabilization process in which binding agents are used to immobilize waste into a solid form so it can be more safely stored or disposed.

hazardous waste — Waste that has characteristics that may pose risks to human health or the environment if improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous wastes possess one of four characteristics (ignitability, corrosivity, reactivity, or toxicity) or appear on special EPA lists. Wastes considered to be hazardous are defined by several environmental laws and are managed according to requirements established by EPA. By definition hazardous waste is not radioactive. At the INEL, hazardous waste is stored for up to 90 days at a designated accumulation point before being sent to

an interim status (RCRA) storage facility, after which it is sent to an off-site disposal facility (See RCRA storage).

Hazardous Waste Management Act (HWMA)

— A law passed by the state of Idaho that implements the provisions of RCRA. This law provides the state of Idaho with oversight of environmental restoration and waste management activities at the INEL.

heavy metals — Metallic elements with high atomic weights (e.g., mercury, chromium, cadmium, arsenic, and lead) that can damage living things at low concentrations and tend to accumulate in the food chain.

High Efficiency Particulate Air (HEPA) filter

— A filter system used to separate particles from air emissions prior to releasing that air to the atmosphere. HEPA filters are commonly used at INEL facilities to prevent radioactive particles from being released to the atmosphere. To be classified as a HEPA filter, a filter must be 99.97 percent efficient for particle sizes between 0 and 3 microns.

high-level waste — The highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced directly from reprocessing and any solid waste derived from the liquid that contains a combination of transuranic waste and fission products in concentrations requiring permanent isolation.

hot cell/hot cell facility — A heavily shielded enclosure for handling and processing (by remote means or automatically) or storing highly radioactive materials.

incineration — The efficient burning of combustible solid and liquid wastes to destroy organic constituents and reduce the volume of the waste. Incinerators are designed to burn with an extremely high efficiency. The greater the burning efficiency, the cleaner the air emission. Incineration of radioactive materials does not destroy the radionuclides but does significantly reduce the volume of these wastes. HEPA filters are used to

prevent radionuclides and heavy metals from leaving the stack and entering the atmosphere.

in-situ vitrification — A technology that involves leaving contamination in place and immobilizing it by turning it into glass.

Interagency Agreement (IAG) — See Federal Facility Agreement and Consent Order (FFA/CO).

Interim Action — A remedial action undertaken to cleanup or contain a potential threat to human health and the environment that can or should be addressed within a short time frame. The study associated with an Interim Action may be completed within an "umbrella" Remedial Investigation/Feasibility Study. Interim Actions are completed on an accelerated schedule and generally deal with well-defined contamination problems that present a significant, although not immediate, threat to human health and the environment.

interim status facility — see RCRA interim status facility.

liquid metal cooled breeder reactor — A reactor that creates more fuel than it consumes and uses liquid metal as a coolant. Liquid sodium is a common metal used to cool this type of reactor.

liquid metal fast breeder reactor — A reactor that operates using a type of fission known as fast fission where the neutrons that are used to split the atoms are not slowed down or moderated as is usually the case with normal fission. It creates more fuel than it consumes and uses liquid metal as a coolant. Liquid sodium is a common metal used to cool this type of reactor.

low-head hydropower — Electrical power generated by releasing water stored by a low-height (low-head) dam. The water is run through turbines, which generate electricity.

low-level waste — Radioactive waste that is neither high-level waste, transuranic waste, spent nuclear fuel, nor by-product material. Some low-level waste contains high levels of radioactivity and, therefore, requires significant shielding. Most low-level waste includes relatively short-lived

radionuclides, although it may contain transuranic radionuclides in concentrations of less than 100 nanocuries per gram of waste. This amount of transuranic radionuclides is not considered high enough to warrant classification as transuranic waste. Most low-level wastes may be safely disposed of using shallow land burial techniques.

millirem — One thousandth of a REM (see REM).

mixed waste — Mixed wastes are hazardous wastes mixed with either high-level, low-level, or transuranic radioactive wastes. Each type of mixed waste is defined separately according to its radioactive constituents (e.g., high-level mixed waste, low-level mixed waste, transuranic mixed waste). Presently mixed waste is managed in accordance with EPA requirements because it contains hazardous constituents. Treating mixed waste by removing the hazardous constituents results in it coming under the jurisdiction of Nuclear Regulatory Commission regulations and internal DOE Orders. Mixed waste is stored at a RCRA interim status storage facility within the Power Burst Facility area and at the Radioactive Scrap and Waste Facility and the Retrievable Surface Storage Facility at ANL-W. At the present time, no facilities are licensed for disposal of mixed waste.

nanocurie — One billionth of a curie (See curie).

National Environmental Policy Act of 1969 (NEPA) — A law that requires federal agencies to include in their decision-making processes appropriate and careful consideration of all potential environmental effects of proposed actions, analyses of the alternatives, and measures to avoid or minimize adverse effects of a proposed action. These analyses are presented in either an environmental assessment (EA) or in an environmental impact statement (EIS).

National Oceanic and Atmospheric Administration (NOAA) — A federal agency that collects and analyzes information on the weather. NOAA has an office at the INEL for collecting weather information. NOAA also is

involved with the environmental monitoring programs at the INEL.

National Priorities List (NPL) — A formal listing of the nation's worst hazardous waste sites as established by CERCLA that have been identified for possible remediation. Sites are ranked by the EPA based on their potential for affecting human health and the environment. The EPA is required to update this list at least once a year.

nonhazardous waste — Waste that does not pose risks to human health and the environment. Municipal sanitary waste is generally considered to be a nonhazardous waste (See hazardous waste).

NO_x — A term used to generically describe the oxides of nitrogen. Two major nitrogen oxides, nitric oxide (NO) and nitrogen dioxide (NO₂) are important air contaminants. Nitric oxide in the presence of sunlight combines with atmospheric oxygen to produce nitrogen dioxide. Nitrogen dioxide in high enough concentrations can cause lung damage.

nuclear fuel — Materials that are fissionable and can be used in nuclear reactors to make energy.

Operable Unit (OU) — A discrete portion of a Waste Area Group consisting of one or many release sites considered together for assessment and cleanup activities. The primary criteria for placement of release sites into an operable unit include geographic proximity, similarity of waste characteristics and site types, and the possibilities for economy of scale.

organic compounds — Chemicals containing mainly carbon, hydrogen, and oxygen. Petroleum products, petroleum-based solvents, and pesticides are examples of organic compounds. Exposure to some organic compounds can produce toxic effects on body tissues and processes.

orphan wastes — Wastes in a classification that currently has no long-term disposal scheduled or anticipated. An example of an orphan waste is low-level mixed waste. It is probably not radioactive enough to qualify for disposal at WIPP but cannot be disposed of on-site because it has hazardous components.

perched water — Unconfined groundwater separated from the underlying main body of groundwater by unsaturated rock.

perennial stream — A watercourse that flows year-round.

performance assessment limiting waste — A combination of waste form, amount, and radionuclides present that would be the critical limiting factor in an assessment of a particular facility's performance.

permeability — The degree of ease with which water can pass through a rock or soil.

picocurie — One trillionth of a curie (See curie).

pollutant migration — The movement of a contaminant away from its initial source. Pollutant migration is of particular concern when that migration is toward an aquifer.

polychlorinated biphenyls (PCBs) — A liquid formerly used as an insulating fluid in electrical equipment that is highly toxic to aquatic life. In the environment, PCBs exhibit many of characteristics of DDT: they persist in the environment for a long time and accumulate in animals.

potentiometric surface — The level to which water will rise in a well.

pressurized water reactor — A nuclear power reactor that uses water under pressure as a coolant. The water boiled to generate steam is in a separate system.

radioactive waste — Any waste contaminated with radioactive materials (materials that are unstable and decay by giving off energy in the form of radioactivity) at levels beyond limits specified by the EPA.

radioactivity — The particles or energy given off by an unstable element when it spontaneously disintegrates. Radioactivity occurs naturally and is everywhere. However, concentrating radioactive materials (e.g., purifying radium-bearing ore into radium metal) and processes such as fission result in the production of large amounts of radioactive

materials. Exposure to high levels of radioactivity can pose potential health risks.

Radiological and Environmental Sciences Laboratory (RESL) — A facility at the INEL involved in environmental monitoring of on- and off-site radiation and research on its effects.

radiological survey — The evaluation of the radiation hazard associated with a given set of conditions that are measured.

radionuclide — A radioactive species (isotope) of an element. A radionuclide disintegrates spontaneously, emitting radiation in the form of charged particles or electromagnetic radiation. Approximately 5,000 natural and artificial radioisotopes have been identified.

RCRA — See Resource Conservation and Recovery Act.

RCRA accumulation point — Locations where hazardous waste generators are allowed to accumulate waste for periods of up to 90 days (from time of generation) without a storage facility permit, provided certain requirements such as contingency planning are met.

RCRA interim status facility — Hazardous waste management facilities (i.e., treatment, storage, or disposal facilities) subject to RCRA requirements that were in existence on the effective date of regulations are considered to have been issued a permit on an interim basis as long as they have met notification and permit application submission requirements. Such facilities are required to meet interim status standards until they have been issued a final permit or until their interim status is withdrawn.

RCRA storage — A facility used to store RCRA hazardous waste for more than 90 days. To be in compliance with the regulatory requirements of RCRA, the facility must meet both documentation requirements (e.g., contingency and waste analysis plans) and physical requirements (e.g., specific aisle widths and separation of incompatible wastes).

reclassified low-level waste — Waste that was previously classified as transuranic waste but has a radioactivity under the currently established limit

for transuranic waste. Reclassified low-level waste is more radioactive than low-level waste and requires additional controls and special handling. Because of its higher radioactivity, this waste stream cannot be accepted for on-site disposal under the current waste acceptance criteria; therefore, it is an orphan waste.

Record of Decision (ROD) — The final determination of the preferred alternative that follows the consideration of public comment. Records of Decision (RODs) apply to both CERCLA and NEPA. RODs for INEL CERCLA decisions are signed by the Regional Administrator of EPA Region 10.

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

rem (roentgen equivalent man) — The unit measuring the dose of ionizing radiation to which the human body has been exposed.

Remedial Investigation (RI) — The CERCLA process of determining the extent of hazardous substance contamination and, as appropriate, conducting treatability investigations. The Remedial Investigation provides the site-specific information for the Feasibility Study.

remediation/remedial action — The act of cleanup where contamination is removed or treated so it will no longer have potential to adversely impact the environment. The remediated area is required to meet contaminant levels or conditions agreed upon prior to the remediation.

remote-handled waste — Waste with high enough radioactivity to require shielding (such as a metal plate between the wastes and the worker) beyond that provided by its container to protect those handling it. It is often handled by robotic methods.

Resource Conservation and Recovery Act (RCRA) — A federal law addressing the

management of waste. Subtitle C of the law addresses hazardous waste, under which a waste must either be “listed” on one of EPA’s hazardous waste lists or meet one of EPA’s four hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity (as measured using the toxicity characteristic leaching procedure [TCLP]). Cradle-to-grave management of wastes classified as RCRA hazardous wastes must meet stringent guidelines for environmental protection as required by the law. These guidelines include regulation of transportation, treatment, storage, and disposal of RCRA-defined hazardous waste. Subtitle D of the law addresses the management of nonhazardous, nonradioactive, solid waste such as municipal wastes.

retrieval — The process of recovering wastes that have been stored or disposed of on-site so they may be characterized, treated, and disposed of in accordance with current environmental laws and regulations.

Rocky Flats Plant — A facility located near Denver, Colorado, that manufactures nuclear weapon components for national defense needs. Radioactive waste (mostly transuranic) generated at the Rocky Flats Plant was formerly sent to the INEL for storage. The state of Idaho has since imposed a moratorium on receipt of all wastes generated out of state.

sedimentary interbeds — Rock layers that are composed of materials such as sand or gravel which are derived from the breakdown of various rocks that are layered between other rock types.

Site Inspection — The CERCLA process to acquire the necessary data to confirm the existence of environmental contamination and to assess the associated potential risks to human health, welfare, and the environment. The data collected must be sufficient to support the decision either to continue with a Remedial Investigation/Feasibility Study (RI/FS) or to remove the site from further investigation through a decision document.

sizing — The process of reducing the size of various types of solid wastes by compaction, melting, or mechanical reduction.

solid municipal waste — Waste products that are neither radioactive nor hazardous but that may require some treatment prior to discharge.

Solid Waste Management Units (SWMU) — Any site, excluding Land Disposal Units, that received or handled solid waste, whether or not hazardous constituents were involved.

solvents — Liquid chemicals, usually organic compounds, that are capable of dissolving another substance. Exposure to some organic solvents can produce toxic effects on body tissues and processes.

SO_x — A term used to generically describe the oxides of sulfur. Sulfur oxides are important as air pollutants because they can combine with water in the atmosphere to form sulfuric acid (acid rain) that can damage the environment.

spent nuclear fuel — Material that has been used as the fuel for a nuclear reactor and has undergone nuclear fission. Spent fuel consists of some of the leftover, unreacted fuel; fission products; transuranic elements; and the fuel rod itself, which is made of metal cladding. Spent fuel can be reprocessed to recycle the unused portion of the fuel and to separate the other components.

Superfund site — Any site that has been listed on the National Priorities List (NPL) because it has been identified by the EPA as having the potential to affect human health and the environment. Study and cleanup activities at these sites are regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). "Superfund" sites that are federal facilities must be cleaned up by the operating agency (lead agency) under the oversight of the EPA and other parties to a Federal Facility Agreement.

Superfund water — Water that is located below the land's surface in spaces between soil grains, in fractures, or in porous formations. It is not necessarily saturated and includes both groundwater and vadose zone water.

thermal treatment — Any process that uses heat to destroy or reduce the volume of a waste.

Evaporation, melting, and incineration are all forms of thermal treatment.

Tiger Team — A group of DOE and contractor technical staff created by DOE Secretary James Watkins in 1989. Tiger Teams are charged with reviewing operations, documentation, agreements, planning, and facility performance in complying with environmental regulations.

transient — A substance or activity that is unstable or of short duration.

transuranic (TRU) waste — Transuranic waste is contaminated with alpha-emitting radionuclides that have a greater atomic weight than uranium, half-lives greater than 20 years, and are in concentrations greater than 100 nanocuries per gram of waste. Some transuranic waste contains high levels of radioactivity and, therefore, would require significant shielding and remote handling instead of contact handling. Transuranic waste will be disposed of in an off-site geologic repository because of its long-lived nature. Much of the transuranic waste stored at the INEL consists of clothing, laboratory ware, and equipment.

TRUPACT-II — An acronym that stands for the second generation of transuranic package transporters. TRUPACT-II's are designed to transport contact-handled transuranic waste to the Waste Isolation Pilot Plant. TRUPACT-II containers are made of two sealed stainless steel containment vessels that can withstand great impacts and high temperatures. Each TRUPACT-II is capable of transporting fourteen 55-gallon (208-liter) drums, two standard waste boxes, or one box and seven drums.

U.S. Geological Survey (USGS) — A federal agency that collects and analyzes information on geology and geological resources including groundwater and surface water. The USGS has an office at the INEL for collecting groundwater and surface water information. The USGS also is involved with the environmental monitoring programs at the INEL.

vadose zone — The area of soil and rock above the water table that contains water which is not saturated. Also called the zone of aeration or zone

of unsaturation under a pressure of less than atmospheric pressure.

vapor vacuum extraction — A technology that applies a vacuum to a well field to remove volatile organic contamination from soils and permeable rock layers in that well field.

vitrification — The process of immobilizing waste that produces a glasslike solid which permanently captures the radioactive materials.

volatile organic compounds (VOC) — Chemicals containing mainly carbon, hydrogen, and oxygen that readily evaporate at ambient temperature. Exposure to some organic compounds can produce toxic effects on body tissues and processes.

Waste Acceptance Criteria (WAC) — A document that establishes and explains the standards (criteria) that a waste must meet to be accepted for treatment, storage, or disposal at a facility.

Waste Area Group (WAG) — One of the 10 distinct areas at the INEL that may require separate remedial actions to eliminate sources of potential releases of contamination to the environment. Nine of the Waste Area Groups are associated with specific facilities; the tenth is associated with the remaining miscellaneous facilities. Each Waste Area Group may be broken down into individual operable units (See Operable Unit).

waste certification — See certified wastes.

waste characterization — The process of determining the make-up of a waste to categorize

it and ensure that it is properly handled. This process is necessary because some wastes historically generated at the INEL are now categorized differently and must be characterized to determine their designation under the current scheme of categorization.

Waste Isolation Pilot Plant (WIPP) — A facility near Carlsbad, New Mexico, intended to demonstrate safe disposal of radioactive waste in a deep geologic environment. A decision whether to convert WIPP to a disposal facility for transuranic waste will be made after successful testing is demonstrated. While not yet open to receive wastes for permanent disposal, WIPP began receiving wastes from the INEL as part of an experimental testing program in early 1991.

waste segregation — The process of separating a single waste into various components that can be reused or recycled, or that require differing types of treatment or disposal.

water pit — A type of facility usually used for the storage of high-level wastes and spent fuel. The water shields the material being stored while allowing it to be accessible for handling.

water table — The surface of a body of unconfined groundwater at which the pressure is equal to that of the atmosphere.

zone of aeration — a zone of water beneath the land's surface containing water under pressure less than atmospheric pressure. Also called the vadose zone or zone of unsaturation.

zone of saturation — a zone containing water beneath the land's surface under pressure greater than atmospheric pressure.

APPENDIXES TO THE INEL SITE-SPECIFIC PLAN

APPENDIX A

FUNDING INFORMATION BY ACTIVITY DATA SHEET

		Dollars in Thousands	
ADS Number	Description	FY 1992	FY 1993
<i>CORRECTIVE ACTIVITIES</i>			
CH-1603	Underground Storage Tanks Upgrades	\$ 529	\$ 247
ID-1009-WN	Corrective Activities at ICPP	7,000	0
		\$ 7,529	\$ 247
<i>TRANSITION ACTIVITIES</i>			
ID-6301-CP	ICPP Facilities Transition	0	300
ID-1008-WN	New ICPP Mission Activities	0	31,000
		\$ 0	\$ 31,300
<i>ENVIRONMENTAL RESTORATION</i>			
CH-1700	Program Management	\$ 241	\$ 472
CH-1701	Historical PCB Spill Cleanup	480	0
CH-1702	WAG 9 Assessment	163	460
CH-1703	Central Liquid Processing Area (Building 752) Decontamination and Decommissioning	3	53
ID-28-EG	WAG 1: Test Area North Assessment and Cleanup	4,980	8,855
ID-30-EG	WAG 2: Test Reactor Area Assessment and Cleanup	7,239	5,228
ID-34-EG	WAG 4: Central Facilities Area Assessment and Cleanup	1,576	1,391
ID-36-EG	WAG 5: Power Burst Facility and Auxiliary Reactor Area Assessment and Cleanup	1,236	581
ID-38-EG	WAG 6: EBR-1/BORAX Assessment and Cleanup	564	1,303
ID-40-EG	WAG 7: Radioactive Waste Management Complex/Buried Waste Program Assessment and Cleanup	16,919	34,840
ID-41-EG	WAG 10: Miscellaneous Units Assessment and Cleanup	2,058	5,791

ADS Number	Description	Dollars in Thousands	
		FY 1992	FY 1993
ID-45-EG	Surveillance and Maintenance D&D	\$ 315	\$ 316
ID-46-EG	ARFVS/NAK D&D Cleanup	715	0
ID-48-EG	Auxiliary Reactor Area-II D&D	430	725
ID-49-EG	Auxiliary Reactor Area-III D&D	380	636
ID-50-EG	Water Reactor Research Test Facility Hot Waste Tank	0	0
ID-51-EG	TAN Technical Support Facility D&D	0	0
ID-52-EG	Auxiliary Reactor Area-I D&D	0	214
ID-53-EG	TAN 607 Decon Shop D&D	0	0
ID-54-EG	Materials Test Reactor D&D	0	0
ID-58-EG	CFA Building 669 Hot Laundry D&D	410	382
ID-60-EG	Engineering Test Reactor D&D	0	0
ID-63-EG	BORAX-V D&D	1,040	700
ID-64-EG	SPERT-IV Waste Holdup Tank and Piping	314	0
ID-65-EG	LOFT Ancillaries D&D	350	719
ID-67-EG	Test Train Assembly Facility D&D	0	0
ID-102-EG	Inactive Underground Storage Tanks	906	1,494
ID-103-E1	INEL ER Tiger Team	200	500
ID-111-E1	Program Management Support	15,191	19,573
ID-112-E1	FFA/CO Grant to the State of Idaho	1,600	1,600
ID-112-E2	Shoshone-Bannock	200	208
ID-1204-WN	WAG 3 Environmental Restoration - Assessment and Cleanup	4,600	3,936
ID-1304-WN	CPP-603 Fuel Receipt and Storage Facility D&D	0	0
ID-1305-WN	Stored Fuel Exterior Waste Tank (SFE-20) and CPP-740 D&D	50	52
ID-1306-WN	CPP-631, -709, -734, and the Chloride Removal System Annex to CPP-603 D&D	511	374
ID-1307-WN	CPP-640 Building D&D	40	21
ID-1308-WN	CPP-601 Spent Fuels Reprocessing Building D&D	0	0
ID-1309-WN	CPP-633 Waste Calcine Facility D&D	503	235
ID-1310-WN	High-Level Liquid Waste Tank Farm D&D	0	0
ID-1311-WN	WINCO Post-D&D Surveillance and Maintenance Activities	42	44
		<u>\$ 63,256</u>	<u>\$ 90,703</u>

ADS Number	Description	Dollars in Thousands	
		FY 1992	FY 1993
WASTE MANAGEMENT			
CH-1601	Facility Operations and Maintenance (Non-Defense)	\$ 2,239	\$ 1,928
CH-1602	General Plant Projects Waste Management (Non-Defense)	129	307
CH-1604	New Facilities Planning (Defense)	0	315
ID-1001-WN	Waste Management Activities	40,650	42,867
ID-1002-WN	ICPP Facility Operations and Maintenance Activities	16,747	22,466
ID-1003-WN	Construction of General Plant Projects	166	4,490
ID-1004-WN	New Facilities Planning	1,845	1,870
ID-1005-WN	High-Level Waste Tank Farm Replacement-Phase I	27,519	61,150
ID-1006-WN	Nitrous Oxide Abatement	2,720	7,320
ID-4103-EG	Waste Minimization/Pollution Prevention	2,740	2,263
ID-4104-EG	Agreements-in-Principle	2,974	3,231
ID-4301-EG	Facility Operations and Maintenance	23,149	39,113
ID-4302-EG	New Facilities Planning	3,977	6,396
ID-4303-EG	General Purpose Plant Projects	985	6,262
ID-4306-EG	Transfer Station	5,129	125
ID-4307-EG	Dry Cask Storage Project	589	2,870
ID-4308-EG	Transuranic Storage Area Retrieval Enclosure Facility	5,302	2,140
ID-4309-EG	Waste Characterization and Storage Facility	26,300	43,000
ID-4310-EG	Waste Reduction Operations Complex	8,824	13,192
ID-4311-EG	Radioactive Waste Management Complex	15,739	22,358
ID-4312-EG	Test Area North	3,475	3,875
		\$ 191,198	\$ 287,538
LANDLORD ACTIVITIES			
ID-1321	INEL Landlord Infrastructure Support	\$ 21,565	\$ 20,494
ID-1322	INEL Fire and Life Safety Improvement	3,000	8,000
ID-1323	INEL Electrical Upgrade	80	1,000
ID-1324	INEL Sewer System Upgrade	2,100	3,700
ID-1325	INEL Transportation Complex	895	5,860
ID-1327	General Plant Projects	5,770	4,980
ID-3452	INEL New Facilities Planning	0	1,035
		\$ 33,410	\$ 45,069

APPENDIX B

PLANNED ENVIRONMENTAL RESTORATION ACTIVITIES FOR FISCAL YEAR 1993

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 1: Test Area North					
	No Action	Nine waste units at IET, LOFT, SMC, TSF, and WRRTF	FFA/CO No Actions. Reviewed under OU 1-10.		
1-01	T1	LOFT asbestos piping, buried asbestos pit, rubble pit, foam solution tank, and cryogen pits; TAN contaminated pit; RPPSA Buildings 647 and 648 and pads; IET foam stabilizer tank and injection well; TSF diesel tank, gravel/acid pit, and three clarifier pits	Track 1 begins and ends in FY 1993. Existing sampling data and historical information will be evaluated.	This is a standalone OU.	If the Track 1 study indicates the potential for significant contamination, a Track 2 study, an Interim Action, or an RI/FS may be required.
1-02	T1	Fuel oil tanks at IET, LOFT, TSF, and WRRTF (10 of the 14 have been removed)	Track 1 begins and ends in FY 1993. Existing sampling data and historical information will be evaluated.	This is a standalone OU.	If the Track 1 study indicates the potential for significant contamination, a Track 2 study, an Interim Action, or an RI/FS may be required.
1-03	T2	TSF bottle site, service station spill, and burn pit; WRRTF burn pit	Track 2 summary report due in FY 1993. Field sampling completed in FY 1992.	This is a standalone OU.	Any cumulative risks or impacts will be evaluated in the WAG 1 Comprehensive RI/FS (OU 1-10).
1-04	T2	LOFT disposal pond; TSF acid neutralization sump, neutralization pits (4), caustic tank, acid pond, and acid pit	Track 2 field sampling will begin in the summer of FY 1993.	OU 1-04 is combined with OU 1-05 because of the similarity of sites between the OUs and the similar timing of the planned activities. A single summary report will be developed in FY 1994.	Any cumulative risks or impacts will be evaluated in the WAG 1 Comprehensive RI/FS (OU 1-10).
1-05	T2	IET stack rubble site and hot waste tank; TSF soil area, intermediate-level (radioactive) waste disposal system, drainage pond, contaminated tank, IET valve pit, PM-2A tanks; WRRTF radioactive liquid waste tank	Track 2 field sampling will begin in the summer of FY 1993.	OU 1-05 is combined with OU 1-04 because of the similarity of sites between the OUs and the similar timing of the planned activities. A single summary report will be developed in FY 1994.	Any cumulative risks or impacts will be evaluated in the WAG 1 Comprehensive RI/FS (OU 1-10).
1-06	T1	LOFT diesel fuel and sulfuric acid spills; TSF disposal pond and HRTE-III mercury spill area	Track 1 begins and ends in FY 1993. Existing sampling data and historical information will be evaluated.	This is a standalone OU.	If the Track 1 study indicates the potential for significant contamination, a Track 2 study, an Interim Action, or an RI/FS may be required.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
1-07A	Post ROD	TSF injection well	Remedial design will be completed and remedial action started in the fall of calendar year 1993.	OU 1-07A and OU 1-07B deal with the same groundwater contaminant plume. The Interim Action associated with OU 1-07A is intended to be a source-control measure, while the RI/FS associated with OU 1-07B addresses the wider area of contamination.	Any information gathered through this Interim Action will be incorporated, as practicable into the OU 1-07B RI/FS.
1-07B	RI/FS	This OU includes the groundwater beneath the TSF, which is contaminated with trichloroethylene. OU 1-07B is the original RI/FS for the groundwater under the FFA/CO. During initial scoping meetings on the RI/FS, DOE, EPA, and IDHW decided to start an Interim Action while the RI/FS was being completed. The Interim Action has been designated OU 1-07A.	A draft RI/FS report is scheduled to be issued in FY 1993. A Record of Decision for a final action is scheduled for October of calendar year 1994.	OU 1-07B and OU 1-07A deal with the same groundwater contaminant plume. The Interim Action associated with OU 1-07A is intended to be a source-control measure, while the RI/FS associated with OU 1-07B addresses the wider area of contamination.	Any cumulative risks or impacts will be evaluated in the WAG 1 Comprehensive RI/FS (OU 1-10).
1-08	T2	TSF railroad turntable and sewage treatment plant; WRRTF injection well	Scoping for this OU is scheduled for late FY 1993. Field sampling will take place in FY 1994.	This is a standalone OU.	Any cumulative risks or impacts will be evaluated in the WAG 1 Comprehensive RI/FS (OU 1-10).
1-09	T1	Evaporation ponds	Track 1 begins and ends in FY 1993. Existing sampling data and historical information will be evaluated.	This is a standalone OU.	If the Track 1 study indicates the potential for significant contamination, a Track 2 study, an Interim Action, or an RI/FS may be required.
1-10	RI/FS	Comprehensive RI/FS for WAG 1	Final sampling and evaluation of all sites.		

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 2: Test Reactor Area					
	No Action	8 waste units at TRA	FFA/CO No Actions. Reviewed under OU 2-13.	Among several scattered possible contaminated sites in and around the TRA facility.	No Action sites will be recognized in the cumulative WAG 2 evaluation to be done under OU 2-13.
2-01	T1	Paint shop ditch		One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	A determination was made that No Further Action is required. This determination will be provided as input to the WAG 2 Comprehensive RI/FS (OU 2-13).
2-02	T1	Locations of removed underground storage tanks (5)	Consensus for future action on revising three of five tank locations.	One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	Determinations were made that No Further Action is required at any of the five underground tank locations in this OU. The determinations will be provided as input of the cumulative assessment that will be done in the WAG 2 Comprehensive RI/FS (OU 2-13).
2-03	T2	French drains (2), acid spill disposal pit, brine tank, fuel oil tank spill, and TRA-614 oil storage north	Begin Track 2 with scoping process.	One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-04	T2	PCB spills (3), oil spill, petroleum product spill, diesel fuel contamination, spills at TRA loading dock, and TRA north storage area		One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
2-05	T2	Hot waste tanks (3), radioactive tanks 1 and 4 (replaced with 4 new tanks), inactive radioactive contaminated tank at TRA-614, and 603/605 tank	Begin Track 2 process by evaluating leakage from tanks and removing tank at TRA-614.	One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-06	T2	Rubble sites (3)	Begin Track 2 process by evaluating potential presence of contaminants and holding scoping meeting.	One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-07	T2	Cooling towers (3) and chromium-contaminated soil	Begin Track 2 process by evaluating presence of chromium.	One of several scattered miscellaneous potential sources of contamination within and around the TRA facility.	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
2-08	T2	MTR canal		OU 2-08 will evaluate potential risk posed by a historical release of radioactively contaminated liquid through a canal leak to the soil that is a potential source of contamination to groundwater.	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-09	T2	Sewage treatment plant, cold waste disposal pond, and final sewage leach ponds	Summary report due in FY 1993; evaluate sampling data to determine further action.	Water discharged through the sewage plant to the sewage ponds and water discharged to the cold waste pond are sources of contamination to groundwater and to soils beneath the plant and ponds. Groundwater contamination was evaluated in the perched water RI/FS, OU 2-12. Further evaluation will be done under the WAG 2 Comprehensive RI/FS (OU 2-13).	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-10	Post Rod	Warm-waste pond sediments	Treatability study underway, report due early in FY 1993.	Contaminated warm wastewater and residual contaminants in pond sediments are potential contributors to groundwater contamination that was evaluated in OU 2-12 and that will be further evaluated in OU 2-13, the Comprehensive RI/FS. Results of the Interim Action on the pond sediments will be evaluated as input to cumulative assessment in the WAG 2 Comprehensive RI/FS (OU 2-13).	Results of the Interim Action will be evaluated as input to the cumulative assessment being done under the WAG 2 Comprehensive RI/FS (OU 2-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
2-11	T2	Warm-waste leach pond and retention basin; waste disposal well, sampling pit, and sump	Summary report due in FY 1993; evaluate sampling data to determine further action.	Water discharged through these systems are potential sources of groundwater contamination that were evaluated in OU 2-12, the perched water RI/FS, and that will be further evaluated in the WAG 2 Comprehensive RI/FS (OU 2-13).	Depending on the results of the Track 2 investigation either a determination will be made that (1) no further action is required, (2) there is a significant threat that should be remediated in a new Interim Action operable unit, or (3) further investigation should be conducted in an RI/FS. If further investigation is required, it will likely be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-12	RI/FS	Perched water zones underlying TRA	Sign ROD; prepare for and begin monitoring.	Perched groundwater and associated contamination resulted from contaminant sources in other OUs. Wastewater systems and ponds, OUs 2-09, 2-10, and 2-11, are known major sources of perched water.	Post-ROD monitoring will provide input to cumulative risk assessment to be done under the WAG 2 Comprehensive RI/FS (OU 2-13).
2-13	RI/FS	Comprehensive RI/FS for WAG 2		Cumulative risks from WAG 2 will be evaluated in this OU.	Input from other OUs/investigations will be provided to perform this assessment.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 3: Idaho Chemical Processing Plant					
	No Action	10 waste units in the vicinity of the ICPP	FFA/CO No Actions. Will be included in WAG 3 Comprehensive RI/FS (OU 3-13).		
3-01	T1	PCB transformer yards (2), staging area, and spill	No Further Action determination was approved for this OU in April 1992 by the FFA/CO Project Managers after reviewing the Track 1 packages.	This is a standalone OU.	The results of the Track 1 No Further Action Determination for this OU will be documented in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-02	T1-2	Soil contamination, contaminated paint chips and Pad S, gas storage building, solid waste storage bin, injection well, gravel pits 1 and 2, fire training pits, paint and paint solvent area, drum storage area, mercury contaminated areas (2), sulfuric acids spills, kerosene tank overflow, paint shop, hexone spills (2), sewage treatment plant lagoons, CFSGP fly ash pit, and abandoned gasoline tank	Twelve of the 19 sites in this OU have been approved as No Further Action by the Project Managers. Three sites have been approved for Track 2 scoping by the FFA/CO Project Managers.	Injection well and gravel pits may be a source of radioactive contamination in groundwater and will be addressed in the WAG 3 Comprehensive RI/FS (OU 3-13).	Any risks or impacts for this OU will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-03	T1	Percolation ponds 1 and 2	Undergoing RCRA closure procedures. Track 1 begins following closure.	Water from these ponds may be a source of contamination in the groundwater. This will be addressed in the WAG 3 Comprehensive RI/FS (OU 3-13).	If the Track 1 study indicates the potential for contamination, either a Track 2 study or an Interim Action may be required, or the potential for contamination will be included in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-04	T1	Friable transite on buildings (9)	Reviewed under OU 3-13.	This is a standalone OU.	If the Track 1 study indicates the potential for contamination, either a Track 2 study or an Interim Action may be required, or the potential for contamination will be included in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-05	T2	Old sewage treatment plant	Summary report of information and sampling data will be completed in FY 1993.	This is a standalone OU.	An cumulative risks or impacts from this OU, if documented, will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
3-06	T1	Contaminated soil, soil storage area, lime pit, and pilot plant storage area	Track 1 packages will be reviewed and decisions made by the FFA/CO Project Managers.	This is a standalone OU.	If the Track 1 study indicates the potential for contamination, either a Track 2 study or an Interim Action may be required, or the potential for contamination will be included in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-07	T2	Well 55-06, contaminated soil from leak in line, radioactive waste unloading area, contaminated soil in tank farm area (7 locations), and tank farm release near valve box A-2	Track 2 investigation and summary report will be completed in FY 1993.	Contamination from the Tank Farm Transfer Line releases has contaminated the perched aquifer in the area of the Tank Farm. Contamination to the deeper groundwater will be investigated under OU 3-13.	Any cumulative risks or impacts from this OU will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-08	T2	Pressurization of the solid storage cyclone, solvent burner, contaminated soil areas (2), decontamination spill, and transfer line leak	Field sampling under Track 2 investigation and summary report will be completed in FY 1993.	Contamination from the Tank Farm Transfer Line releases (being studied under OU 3-07) has contaminated the perched aquifer in the area of the Tank Farm.	Any cumulative risks or impacts from this OU will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).
B-9 3-09	T2	Concrete settling basin, vault, and dry wells; french drain; temporary storage area; contaminated soil areas (4); trench; basin filter system failure; plastic pipeline break; sludge and water release; soil storage area; line leak; particulate air release; abandoned liquid radioactive storage tank	Prepare scope of work to begin Track 2 investigation.	This is a standalone OU.	Any cumulative risks or impacts from this OU will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-10	T2	Drainage ditch, grease pit, courtyard pilot plant release, and nitric acid contamination	Prepare scope of work, sampling and analysis plan to begin Track 2 investigation.	This is a standalone OU.	Any cumulative risks or impacts from this RI/FS will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-11	T2	Chemical storage and evaporator pipeline spills	Prepare scope of work, sampling and analysis plan to begin Track 2 investigation.	This is a standalone OU.	Any cumulative risks or impacts from this OU will be evaluated in the WAG 3 Comprehensive RI/FS (OU 3-13).
3-12	T1	Vent tunnel drain leak and abandoned pipelines	Complete Track 1 by preparing decision document.	This is a standalone OU.	If the Track 1 study indicates the potential for contamination, either a Track 2 study or an Interim Action may be required, or the potential for contamination may be included in the WAG 3 Comprehensive RI/FS (OU 3-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
3-13	RI/FS	Comprehensive RI/FS for WAG 3		OU 3-13 will address any cumulative risks or impacts for contamination to the groundwater from OU 3-02, OU 3-03, OU 3-07, and OU 3-08.	

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 4: Central Facilities Area					
4-01	IA	Gravel pit and french drain	OU 4-01 being addressed with ordinance IA (OU 10-05)	Among several locations where unexploded ordnance from past Naval testing is located.	Being addressed in OU 10-5, Ordinance IA. Results will provide input to the WAG 4 Comprehensive RI/FS (OU 4-13) or the INEL Comprehensive RI/FS (OU 10-4).
4-02	T1	Four dry wells	Track 1 in process to determine need for future action.	Among several scattered potentially contaminated locations at the CFA.	Track 1 evaluations will determine whether No Action is necessary, if further investigation is necessary, or if an Interim Action should be initiated. If further investigation is necessary it will be done as part of a planned Track 2 investigation or done in the WAG 4 Comprehensive RI/FS (OU 4-13). If an Interim Action is needed a new Interim Action OU could be initiated.
4-03	T1	Underground tanks (21)	Track 1 in process to determine need for future action.	Among several scattered potentially contaminated locations at the CFA.	Track 1 evaluations will determine whether No Action is necessary, if further investigation is necessary, or if an Interim Action should be initiated. If further investigation is necessary it will be done as part of a planned Track 2 investigation or done in the WAG 4 Comprehensive RI/FS (OU 4-13). If an Interim Action is needed a new Interim Action OU could be initiated.
4-04	T1	Drum dock, returnable drum storage, and excess drum storage	Track 1 in process to determine need for future action.	Among several scattered potentially contaminated locations at the CFA.	Track 1 evaluations will determine whether No Action is necessary, if further investigation is necessary, or if an Interim Action should be initiated. If further investigation is necessary it will be done as part of a planned Track 2 investigation or done in the WAG 4 Comprehensive RI/FS (OU 4-13). If an Interim Action is needed a new Interim Action OU could be initiated.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
4-05	T2	Fire department training area and pond		Although this OU is part of WAG 4, the pond is essentially independent of WAG 4 because of its remote location to the north of CFA.	Depending on the results of this Track 2 investigation, either a determination of no further action will be made, an Interim Action will be initiated as a new OU, or further investigation will be required under the WAG 4 Comprehensive RI/FS (OU 4-13) or the INEL Comprehensive RI/FS (OU 10-04).
4-06	T2	Spray paint booth drain, lead shop, and lead storage area		Although this OU is part of WAG 4, the pond is essentially independent of WAG 4 because of its remote location to the north of CFA.	Depending on the results of this Track 2 investigation, either a determination of no further action will be made, an Interim Action will be initiated as a new OU, or further investigation will be required under the WAG 4 Comprehensive RI/FS (OU 4-13) or the INEL Comprehensive RI/FS (OU 10-04).
B-12 4-07	T1	French drains (3)	Track 1 in process to determine need for future action.	Among several scattered potentially contaminated locations at the CFA.	Track 1 evaluations will determine whether No Action is necessary, if further investigation is necessary, or if an Interim Action should be initiated. If further investigation is necessary it will be done as part of a planned Track 2 investigation or done in the WAG 4 Comprehensive RI/FS (OU 4-13). If an Interim Action is needed a new Interim Action OU could be initiated.
4-08	T2	Sewage plant, septic tank, and drain field		Among several scattered potentially contaminated sites at CFA.	This preliminary evaluation will determine whether No Further Action is necessary at these sites, whether action should be taken quickly under a new Interim Action OU, or whether further evaluation should be done under the WAG 4 Comprehensive RI/FS (OU 4-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
4-09	T2	Transformer yard oil spills, pump station fuel spills, and tank farm pump station spills		Among several scattered potentially contaminated sites at CFA.	This preliminary evaluation will determine whether No Further Action is necessary at these sites, whether action should be taken quickly under a new Interim Action OU, or whether further evaluation should be done under the WAG 4 Comprehensive RI/FS (OU 4-13).
4-10	T2	Landfill I	A Track 2 will be completed to determine required action.	Landfill I is located among two other municipal Landfills (II & III) at CFA. Landfills II and III are being investigated as OU 4-12. All three landfills are potential contaminant sources.	The Track 2 investigation at Landfill I was initiated before the Landfills II & III RI/FS because there was little information on Landfill I. Information gained during this Track 2 study will either lead to a determination that No Further Action is necessary at Landfill I, that remedial action should be taken which would likely occur together with Landfills II & III action if taken, or that more investigation is required. More investigation would either occur in the Landfills II & III RI/FS (OU 4-12) or the WAG 4 Comprehensive RI/FS (OU 4-13).
4-11	RI/FS	Motor Pool Pond	A ROD is being developed.	The motor pool pond is essentially a standalone unit due to it's location east of CFA away from the other sites. Past wastewater disposal at the pond may contribute to groundwater contamination that will be evaluated in the WAG 4 Comprehensive RI/FS (OU 4-13).	Potential groundwater contamination from past practices at the pond will be evaluated in the WAG 4 Comprehensive RI/FS (OU 4-13).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
4-12	RI/FS	Landfills II and III	RI/FS initiating FY 1993. Scope of Work in Administrative Report about January 1993. RI/FS work plan in Administrative Record about June 1993. RI/FS will evaluate potential for release of contaminants and need for action such as capping.	These landfills are located in close proximity to Landfill I, which is being evaluated in OU 4-10.	Information from this investigation will provide input to the WAG 4 Comprehensive RI/FS (OU 4-13). Information from the preliminary investigation on Landfill I (OU 4-10) will be used in this investigation as appropriate.
4-13	RI/FS	Comprehensive RI/FS for WAG 4	Continue work on the RI/FS and work plan for FY 1993.	The cumulative impacts from all OUs in WAG 4 will be evaluated in this RI/FS.	Information obtained in the other OUs in WAG 4 will be evaluated from a cumulative perspective. This cumulative evaluation will then provide input to the INEL Comprehensive RI/FS (OU 10-4).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 5: Power Burst Facility/Auxiliary Reactor Area					
	No Action	16 waste units at PBF and ARA	FFA/CO No Actions. Revisited under OU 5-12.	This is a standalone OU.	All No Action Sites will be reviewed in the WAG 5 Comprehensive RI/FS (OU 5-12).
5-01	T1	ARA-I evaporation pond, radionuclide tank and drain; ARA-II detention tank for fuel oil/radionuclides; two ARA-III radionuclide tanks	Track 1 will begin and end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	Track 1 documents will be prepared for each site recommending No Further Action, transfer to a Track 2 study, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12). OU 5-01 was moved from FY 1994 to FY 1993.
5-02	T1	PBF SPERT-I and SPERT-III leach ponds, and SPERT-IV lake	Track 1 will end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	Track 1 documents will be prepared for each site recommending No Further Action, transfer to a Track 2 study, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).
5-03	T1	PBF Cooling Tower Area and drainage ditch; Reactor Area blowdown pit, oil drum storage, and rubble pit; SPERT-IV blowdown pit	Track 1 will begin and end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	Track 1 documents will be prepared for each site recommending No Further Action, transfer to a Track 2 study, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12). OU 5-03 was moved from FY 1994 to FY 1993.
5-04	T1	PBF Control Area oil tank (removed); SPERT-II fuel oil tank; SPERT-III fuel oil tank (removed)	Track 1 will end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	Track 1 documents will be prepared for each site recommending No Further Action, transfer to a Track 2 study, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
5-05	T1-T2	ARA-II SL-1 burial ground	Track 2 scoping activities to be completed in FY 1993. Track 2 scoping documentation may be initiated in FY 1993.	This is a standalone OU.	The Track 2 Report will recommend No Further Action, additional sampling, an Interim Action, transfer to the WAG 5 Comprehensive RI/FS (OU 5-12), an independent RI/FS for the OU, or a groundwater RI/FS (either for just WAG 5 or sitewide).
5-06	T2	ARA-III leach pond and ARA-IV contaminated leach pit 1	Track 2 activities will begin in FY 1993. Prepare scope of work, sampling analysis plan, and field sampling.	This is a standalone OU.	The Track 2 Report will recommend No Further Action, additional sampling, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).
5-07	T2	ARA-I sanitary sewer system and ARA-I radioactively contaminated soil site	Track 2 activities will end in FY 1993. Evaluate laboratory data and finalize summary report.	This is a standalone OU.	The Track 2 Report will recommend No Further Action, additional sampling, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).
5-08	T2	PBF Reactor Area injection wells (2) and SPERT-I seepage pit	Track 2 activities will begin in FY 1993. Prepare scope of work, sampling analysis plan, and field sampling.	This is a standalone OU.	The Track 2 Report will recommend No Further Action, additional sampling, an Interim Action, transfer to the WAG 5 Comprehensive RI/FS (OU 5-12), or a groundwater RI/FS (either for just WAG 5 or sitewide).
5-09	T2	PBF SPERT-II, -III, and -IV leach ponds	Track 1 activities will end in FY 1993 leading to a Track 2 study.	This is a standalone OU.	The Track 2 Report will recommend No Further Action, additional sampling, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).
5-10	RI/FS	ARA-I chemical evaporation pond	This OU started as an IA and is currently being studied under an RI. A ROD was issued in early FY 1993.	This is a standalone OU.	The Track 2 Report will recommend No Further Action, additional sampling, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
5-11	T1	ARA-III sanitary sewer leach field and septic tank	Track 1 will end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	Track 1 documents will be prepared for each site recommending No Further Action,, transfer to a Track 2 study, an Interim Action, or transfer to the WAG 5 Comprehensive RI/FS (OU 5-12).
5-12	RI/FS	Comprehensive RI/FS for WAG 5.	Out year CAP's planning only.	Encompasses all WAG 5 OUs.	Revisits all previous OU RODs and decisions and assesses cumulative effects for final disposition in WAG 5 Comprehensive and site-wide RI/FSs.
5-13	IA	PBF corrosive waste disposal sump/ evaporation pond	ROD signed September of 1992. Begin remedial design treatability study and remedial action.	This is a standalone OU.	Will be revisited in WAG 5 Comprehensive RI/FS (OU 5-12).

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 6: Experimental Breeder Reactor No. 1					
	No Action	5 waste units at EBR-1	FFA/CO No Actions. Revisited under OU 6-05.	N/A	N/A
6-01	T2	BORAX-I Burial site		This is a standalone OU.	If sampling indicates a potential for groundwater impact, further work will be integrated with the OU 10-04 RI/FS.
6-02	T1	BORAX-II-V leach pond; BORAX trash dump and AEF septic tank	Track 1 will end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	No relationships.
6-03	T1	BORAX fuel oil tanks (1 active, 1 inactive); EBR-1 fuel oil and petroleum tanks (8)	Track 1 will end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	If the Track 1 study indicates potential for contamination, either a Track 2 study, an Interim Action, or re-evaluation under the sitewide Comprehensive RI/FS (OU 10-04) will be undertaken.
6-04	T1	Radioactive soil contamination	Track 1 will end in FY 1993. Evaluate existing information and/or sampling data.	This is a standalone OU.	No other OUs are impacted by this OU.
6-05	RI/FS	Comprehensive RI/FS for WAG 6 and WAG 10 (OU 10-04)	None	The cumulative risks and impacts of all operable units in WAG 6 will be evaluated in this RI/FS.	Cumulative risks from all WAG 6 activities will be evaluated in this RI/FS.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 7: Radioactive Waste Management Complex					
7-01	T2	SDA Soil Vaults	Summary report due mid FY 1993.	This is a standalone OU.	If the Track 2 study indicates a potential risk from contaminant release, an Interim Action or an RI/FS may be pursued.
7-02	T2	SDA Acid Pit	Final summary report will be issued.	This is a standalone OU.	The Track 2 report will evaluate risk and recommend No Further Action, an RI/FS, an Interim Action, or final evaluation in the WAG 7 Comprehensive RI/FS (OU 7-14).
7-03	T1	Non-TRU contaminated pits and trenches	Complete Track 1 early FY 1993. Initiate Track 2 activity with scope of work and perform sampling.		
7-04	T2	Air pathway		The Air Pathway OU examines the threat posed by actual or potential releases of VOCs, fission products, or transuranic elements from pits or trenches in the SDA through an air pathway.	The information from this Track 2 study will be used to feed the WAG 7 Comprehensive RI/FS (OU 7-14). The cumulative risk of this and the other pathway OUs will be addressed in OU 7-14.
7-05	T2	Surface-water pathways and surficial sediments	Track 2 in progress, to be complete mid FY 1993. Sampling completed. Preparing summary report.	This OU examines whether releases of VOCs, fission products, or transuranic wastes have occurred from pits or trenches to any surface-water pathway.	The information from this Track 2 study will be used to feed the WAG 7 Comprehensive RI/FS (OU 7-14). The cumulative risk of this and the other pathway OUs will be addressed in OU 7-14.
7-06	T2	Groundwater pathway	Complete first Track 2, evaluate data for placement of future monitoring wells.	This OU examines the Snake River Plain Aquifer beneath the SDA to determine whether any contaminants from the SDA have migrated to the aquifer and, if so, at what concentrations.	The information from this Track 2 study will be used to feed the WAG 7 Comprehensive RI/FS (OU 7-14). The cumulative risk of this and the other pathway OUs will be addressed in OU 7-14.
7-07	T2	Vadose zone (rad/metals)	Evaluating existing data prior to Track 2 activity. Begin Track 2 activity in late FY 1993.	This OU will examine whether there are releases of radionuclides and/or metals into the Vadose Zone from pits or trenches.	If the Track 2 study indicates a potential risk from contaminant release, an Interim Action or an RI/FS may be pursued.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
7-08	RI/FS	Vadose zone organics RI/FS	Complete draft RI/FS.	Organic solvent vapors (in the Vadose Zone) from pits and trenches are a potential source of groundwater contamination. This OU RI/FS will address the risks from these VOCs and examine remedial options, if appropriate.	This OU deals with past and current releases of organic substances from pits and trenches found principally in OU 7-13.
7-09	T1	TSA releases	None	This is a standalone OU.	If the Track 1 study indicates a potential release and associated risk, a Track 2 study may be recommended. Cumulative risk from this OU will be analyzed in the WAG 7 Comprehensive RI/FS (OU 7-14).
7-10	IA	Pit 9 process demonstration	Proof-of-Process testing on proposed remediation systems.	This is a part of the transuranic pits and trenches OU. The Interim Action at this OU will remediate contaminant source material in Pit 9.	
7-11	T1	Septic tanks (3)	Complete Track 1 Summary Information Report and gain decision from Project Managers.	This is a standalone OU.	The Track 1 study will review existing data for evidence of any release from septic tanks. If risk exists from potential release posing a threat, a Track 2 study may be warranted. Cumulative risk will be analyzed in the WAG 7 Comprehensive RI/FS (OU 7-14).
7-12	RI/FS	Pad A RI/FS	Complete RI/FS, proposed plan, and public comment period.	This is a standalone OU.	This RI/FS will examine the nature and extent of any releases from materials on Pad A, and quantify those risks. Action will be recommended as appropriate.
7-13	RI/FS	TRU pits and trenches RI/FS	Evaluating existing information and initiating preliminary sampling using Track 2.	This is a standalone OU.	The RI/FS for this OU will examine the nature and extent of releases of materials from these pits and trenches, and quantify those risks. Action will be recommended as appropriate.
7-14	RI/FS	Comprehensive RI/FS for WAG 7		Cumulative risk from all other OUs will be evaluated under this OU.	The RI/FS for this OU will examine the nature and extent of releases of materials from these pits and trenches, and quantify those risks. Action will be recommended as appropriate.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
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Waste Area Group 8: Naval Reactors Facility

	No Action	Old parking lot landfill area, old radiography area, kerosene spill, submarine thermal reactor gravel pit, old incinerator, old transformer yard, gatehouse transformer, main transformer yard, and five solid waste management units
8-01	T1	South landfill, lagoon construction rubble, east rubble area, large ship reactor prototype construction debris area, and three solid waste management units
8-02	T1	Old painting booth, Expended Core Facility french drain, old sewage effluent ponds, site lead shack, old lead shack, old boilerhouse blowdown pit, miscellaneous NRF sumps and french drains, old radioactive materials storage and laydown area, corrosive area, the south gravel pit, and a solid waste management unit
8-03	T1	Site incinerator, degreasing facility, and six solid waste management units
8-04	T1	Large ship reactor prototype transformer yard, natural circulation reactor oily waste spill, large ship reactor prototype oily waste spill, submarine thermal reactor industrial wastewater spill area and old fuel oil tank spill, Expended Core Facility Acid spill area, and a southeast corner oil spill
8-05	T2	West refuse pit 4, original submarine thermal reactor refuse pit, and one solid waste management unit
8-06	T2	Lagoon landfills 1 and 2, west refuse pits 1, 2, and 3, and the east refuse pits and trenching area

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
8-07	RI/FS	Industrial waste ditch (exterior)			
8-08	RI/FS	Comprehensive RI/FS for WAG 8			
8-09	T2	Industrial waste ditch (interior)			

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 9: Argonne National Laboratory-West					
	No Action	18 waste units at EBR-II and Transient Reactor Test Facility (EBR-II/TREAT)	FFA/CO No Actions. Revisited under OU 9-04.	None	Revisited under WAG 9 Comprehensive RI/FS (OU 9-04).
9-01	T1	Septic tank, Knawa Butte debris pile, EBR-II Transformer yard and sump, sodium boiler building hotwell, sewage lagoons, sludge pit, industrial waste and sanitary waste lift stations, and TREAT photo processing discharge ditch	Existing sample data and historical information is being evaluated for these Track 1 Solid Waste Management Units. This began the first quarter of FY 1993.	This is a standalone OU.	If the Track 1 study indicates the potential for contamination, either a Track 2 study, an Interim Action, or an RI/FS may be required. If an RI/FS is required, this OU will be evaluated in the WAG 9 Comprehensive RI/FS (OU 9-04).
9-02	T2	EBR-II leach pit	Sludge removal from the bottom of the pit.	This is a standalone OU. Water historically disposed of in the pit resulted in radionuclide and metal contamination within the pit. Groundwater samples downstream from the pit have not indicated any groundwater contamination.	Any cumulative risks or impacts from this Track 2 study will be evaluated in the WAG 9 Comprehensive RI/FS (OU 9-04). Data from this Track 2 study will be used in the OU 9-03 investigation.
9-03	T2	Open burn pits (3), industrial/sanitary waste lift station, and fuel oil spill	None	The industrial/sanitary lift station (industrial side) discharged to OU 9-02.	Any cumulative risks or impacts from this Track 2 study will be evaluated in the WAG 9 Comprehensive RI/FS (OU 9-04).
9-04	RI/FS	Comprehensive RI/FS for WAG 9	None	The cumulative risks and impacts of all OUs in WAG 9 will be evaluated in this RI/FS.	All investigations conducted in WAG 9 will be assimilated into this RI/FS. Any cumulative impacts that go beyond WAG 9 will be evaluated in the WAG 10 Comprehensive RI/FS (OU 10-04), which encompasses the entire INEL.

T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

Operable Unit	Status	Description	Planned Activities for FY 1993	Physical Relationships with Other OUs	Planning Relationships with Other OUs
Waste Area Group 10: Miscellaneous Sites					
	No Action	9 waste units	FFA/CO No Actions. Revisited under OU 10-04.	N/A	N/A
10-01	T2	Liquid corrosive chemical disposal area	Evaluation of Track 2 begins with preparation of scope of work and sampling and analysis plan.	This is a standalone OU.	If the results of this Track 2 study indicate a potential risk, further work will be integrated with the WAG 10 Comprehensive RI/FS (OU 10-04).
10-02	T2	OMRE leach pond		This is a standalone OU.	If the results of this Track 2 study indicate a potential risk, further work will be integrated with the WAG 10 Comprehensive RI/FS (OU 10-04).
10-03	T2	Ordnance areas		Any areas remaining after completion of OU 10-05.	If the results of this Track 2 study indicate risk, an Interim Action will likely be used to remove the risk. Any remaining risk (ordnance, powder, etc.) will become part of the WAG 10 Comprehensive RI/FS (OU 10-04).
10-04	RI/FS	WAG 10 Comprehensive/Snake River Plain Aquifer RI/FS		The cumulative risks and impacts of all OUs at the INEL will be evaluated in this RI/FS.	This RI/FS will begin at the conclusion of the Comprehensive RI/FSs from all other WAGs. All investigations conducted at the INEL site will be assimilated into this RI/FS.
10-05	Post ROD	Ordnance Interim Action	Begin and end record search, prepare remedial design and remedial action plans, and conduct part of the field work.	OU 4-01 is included in this OU.	This Interim Action is to remove immediate risk. Any remaining risk (ordnances) will become part of OU 10-03.
T1 = Track 1; T2 = Track 2; IA = Interim Action; RI/FS = Remedial Investigation and Feasibility Study; ROD = Record of Decision.

APPENDIX C

TABLE OF ACTIVITY DATA SHEETS

New ADS Number	Description	Primary Driver	Old ADS Number
ANL-W			
CORRECTIVE ACTIVITIES			
CH-1603	Underground Storage Tanks Upgrades	40 CFR 280, Underground Storage Tank Regulations	CH-1503-AB
	Liners-Radioactive Scrap and Waste Facility RCRA Compliance Permit; Radioactive Scrap and Waste Facility RCRA Permit Application and Upgrades	40 CFR 270, Hazardous Waste Permit Regulations	CH-1509-AA; CH-1519-AA
ENVIRONMENTAL RESTORATION			
CH-1702	Characterize Land Disposal Units and Solid Waste Management Units identified in accordance with the INEL FFA/CO.	DOE/EPA/State of Idaho FFA/CO	CH-1501
CH-1701	Historical PCB spill cleanup	40 CFR 761, PCB Regulations	CH-1507
CH-1703	Surveillance and Maintenance for the Central Liquid Processing Area (Building 752) prior to Decontamination and Decommissioning	DOE Order 5820.2A, Radioactive Waste Man- agement	CH-1514-AC
CH-1703	Decontamination and Decommissioning the Central Liquid Waste Processing Area (Building 752)	DOE Order 5820.2A, Radioactive Waste Man- agement	CH-1515-AC
CH-1700	Environment, Safety, and Health Agreement-in-Principle	DOE/State of Idaho ES&H Agreement-in- Principle	CH-1522

New ADS Number	Description	Primary Driver	Old ADS Number
CH-1700	Tiger Team Findings Corrections for Environmental Area	DOE Tiger Team Findings	CH-1524-AD
WASTE MANAGEMENT			
CH-1604	Radioactive Sodium Waste Process Facility	40 CFR 268, Land Disposal Restriction Regulations	CH-1505-AA
CH-1601	Radioactive Waste Disposal	DOE Order 5820.2A, Radioactive Waste Management	CH-1506; CH-1506-01
CH-1601	Hazardous Waste/Low-Level Mixed Waste Operations	40 CFR 260-265, Hazardous Waste Management Regulations; DOE Order 5820.2A, Radioactive Waste Management	CH-1508; CH-1508-01
CH-1601; CH-1602	Radioactive Scrap and Waste Facility Operations	40 CFR 270, Hazardous Waste Permit Regulations	CH-1510-AA; CH-1510-01; CH-1518-AA
CH-1601	PCB Capacitors Disposal	DOE Order 5400.3, Hazardous and Radioactive Waste Program	CH-1512
CH-1601	Shielded Hot Air Drum Evaporator for treatment of radioactive liquid waste	DOE Order 5820.2A, Radioactive Waste Management	CH-1513
CH-1602	Underground Storage Tanks Upgrades	40 CFR 280, Underground Storage Tank Regulations	CH-1517-AB
CH-1602	Laboratory and Office Building Radioactive Liquid Transfer Line	DOE Order 5820.2A, Radioactive Waste Management	CH-1523
CH-1601	Tiger Team Findings Corrections for Waste Management Area	DOE Tiger Team Findings	CH-1525-AD
CH-1601	Hazardous Materials Training and Determination	40 CFR 260-265, Hazardous Waste Management Regulations	CH-1527

New ADS Number	Description	Primary Driver	Old ADS Number
CH-1601	Waste Minimization	DOE Order 5400.11, General Environmental Protection Program	CH-1528
CH-1601	Environmental Restoration/Waste Management Program Support	DOE Order 4700, Project Management	CH-1529
CH-1601	PCB Inventory of ANL-W Site	40 CFR 761, PCB Regulations	New
CH-1601	Part B Permit Application for FERMI Sodium Storage Facility	40 CFR 260-265, Hazardous Waste Management Regulations	New
CH-1605	Waste Handling Facility	40 CFR 260-265, Hazardous Waste Management	New

EG&G**ENVIRONMENTAL RESTORATION**

ID-28-EG	WAG 1: Assessment and cleanup of Test Area North (includes 71 potential release sites and 10 operable units)	DOE/EPA/State of Idaho FFA/CO	ID-28-E1 ID-28-E2
ID-30-EG	WAG 2: Assessment and cleanup of Test Reactor Area	DOE/EPA/State of Idaho FFA/CO	ID-30-E1 ID-30-E2
ID-34-EG	WAG 4: Assessment and cleanup of Central Facilities Area (includes 44 potential release sites and 13 operable units)	DOE/EPA/State of Idaho FFA/CO	ID-34-E1 ID-34-E2
ID-36-EG	WAG 5: Assessment and cleanup of 13 operable units contained within the Power Burst Facility and Auxiliary Reactor Area	DOE/EPA/State of Idaho FFA/CO	ID-34-E1 ID-34-E2
ID-38-EG	WAG 6: Assessment and cleanup of 15 potential release sites at EBR-1 and BORAX	DOE/EPA/State of Idaho FFA/CO	ID-36-E1 ID-36-E2
ID-40-EG	WAG 7: Assessment and cleanup of 14 operable units within the Radioactive Waste Management Complex	DOE/EPA/State of Idaho FFA/CO	ID-40-E1 ID-40-E2

New ADS Number	Description	Primary Driver	Old ADS Number
ID-41-EG	WAG 10: Assessment and cleanup of 14 potential release sites within 5 operable units	DOE/EPA/State of Idaho FFA/CO	ID-41-E1 ID-41-E2
ID-45-EG	Surveillance and Maintenance D&D: Provide surveillance and maintenance of surplus radioactively contaminated facilities awaiting decommissioning	DOE Order 5820, Radioactive Waste Management	ID-45-E1
ID-46-EG	Decontamination and decommissioning of the Army Reentry Vehicle Facility Site	DOE Order 5820, Radioactive Waste Management	ID-46-E1
ID-48-EG	Decontamination and decommissioning of Auxiliary Reactor Area II	DOE Order 5820, Radioactive Waste Management	ID-48-E2
ID-49-EG	Decontamination and decommissioning of Auxiliary Reactor Area III	DOE Order 5820, Radioactive Waste Management	ID-49-E1
ID-50-EG	Characterization and decision analysis of the Hot Waste Tank at the Water Reactor Research Test Facility, decontamination and decommissioning	DOE Order 5820, Radioactive Waste Management	ID-50-E1
ID-51-EG	Characterization, decontamination and decommissioning of the Test Area North Technical Support Facility	DOE Order 5820, Radioactive Waste Management	New
ID-52-EG	Decontamination and Decommissioning of Auxiliary Reactor I	DOE Order 5820, Radioactive Waste Management	ID-52-E1 ID-52-E2
ID-53-EG	Characterization, assessment, and cleanup of Test Area North Building 607 Decon Shop	DOE Order 5820, Radioactive Waste Management	ID-53-E1 ID-53-E2
ID-54-EG	MTR D&D: Assessment, decision analysis, cleanup documentation, and cleanup of the Materials Test Reactor	DOE Order 5820, Radioactive Waste Management	ID-54-E1 ID-54-E2
ID-58-EG	Decontamination and decommissioning of Central Facilities Area Hot Laundry building	DOE Order 5820, Radioactive Waste Management	ID-58-E1 ID-58-E2

New ADS Number	Description	Primary Driver	Old ADS Number
ID-60-EG	Assessment, decision analysis, cleanup documentation, and cleanup of the Engineering Test Reactor	DOE Order 5820, Radioactive Waste Management	ID-60-E1 ID-60-E2
ID-63-EG	BORAX-V D&D: Assessment and cleanup of the Boiling Water Reactor Experiment Facility	DOE Order 5820, Radioactive Waste Management	ID-63-E1
ID-64-EG	SPERT IV Waste Holdup Tank and Piping	DOE Order 5820, Radioactive Waste Management	ID-64-E1
ID-65-EG	LOFT Ancillaries D&D: Characterization, assessment, and cleanup of the Loss of Fluid Test Ancillary equipment	DOE Order 5820, Radioactive Waste Management	ID-65-E1 ID-65-E2
ID-67-EG	TTAF D&D: Assessment and cleanup of the Test Train Assembly Facility	DOE Order 5820, Radioactive Waste Management	ID-67-E1 ID-67-E2
ID-102-EG	Provide the permanent closure of all inactive (out-of-service or abandoned) Underground Storage Tanks	40 CFR 268, Underground Storage Tank Regulations	ID-102-E3
ID-103-E1	INEL ER Tiger Team: Perform root cause analysis and prepare corrective action plans for Tiger Team findings and concerns	DOE Tiger Team Findings	ID-103-E1
ID-111-E1	Program Management Support: Provide all management activities by the various contractors for the INEL ER Program MSA	DOE Order 4700, Project Management	
ID-112-E1	FFA/CO Grant to Idaho: Provide, through a grant to the state of Idaho, funds to cover costs to the state of implementing the FFA/CO	DOE/State of Idaho ES&H Agreement-in-Principle	ID-112-E1
ID-112-E2	Provide for the Shoshone-Bannock Tribes to be among the organizations that assure the appropriate level of environmental monitoring within and near the INEL is performed	DOE/Shoshone-Bannock Agreement-in-Principle	ID-112-E2

New ADS Number	Description	Primary Driver	Old ADS Number
WASTE MANAGEMENT			
ID-4103-EG	Waste Minimization	DOE Order 5400.1, General Environmental Protection Program	ID-20-E1
ID-4104-EG	Agreements-in-Principle	DOE/ISU/State of Idaho ES&H Agreement-in- Principle	ID-19-E1, ID-19-E2, ID-19-E3
ID-4301-EG	Facility Operations and Maintenance	DOE Order 4700, Project Management; DOE Order 5400, Environmental Quality and Impact	ID-3-E1, ID-6-E1, ID-7-E1, ID-9-E1, ID-11-E2, ID-12-E1, ID-15-E1, ID-16-E1, ID-69-E1, ID-76-E1, ID-102-E2, ID-102-E4
ID-4302-EG	New Facilities Planning	DOE Order 5820.2A, Radioactive Waste Man- agement	ID-5-E1, ID-5-E2, ID-14-E1, ID-21-E1
ID-4303-EG	General Purpose Plant Projects	DOE Order 5820, Radioactive Waste Man- agement	ID-22-E1
ID-4306-EG	Transfer Station	40 CFR 258, Municipal Solid Waste Landfill	ID-71-E1
ID-4307-EG	Dry Cask Storage	DOE Order 5480, Environmental Safety and Health	ID-25-E2
ID-4308-EG	Transuranic Storage Area Retrieval Enclosure	40 CFR 265, Hazardous Waste Man- agement	ID-101-E1
ID-4309-EG	Waste Characterization and Storage Facility	40 CFR 264, Hazardous Waste Man- agement	ID-101-E2
ID-4310-EG	Waste Reduction Operations Complex	DOE Order 5820, Radioactive Waste Man- agement	ID-1-E1, ID-17-E1, ID-18-E1

New ADS Number	Description	Primary Driver	Old ADS Number
ID-4311-EG	Radioactive Waste Management Complex	DOE Order 5820, Radioactive Waste Management	ID-2-E1, ID-2-E2, ID-8-E1, ID-8-E2, ID-8-E3, ID-8-E5
ID-4312-EG	Test Area North	DOE Order 5820, Radioactive Waste Management	ID-10-E1, ID-25-E1
WINCO			
CORRECTIVE ACTIVITIES			
ID-1009-WN	Double encasement of single encased buried/embedded radioactive and hazardous waste transfer lines at ICPP	40 CFR 260-265, Hazardous Waste Management Regulations	ID-1028-C1
ENVIRONMENTAL RESTORATION			
ID-1204-WN	Assessment and remediation activities of 13 operable units containing 83 hazardous/radioactivity sites at the ICPP	40 CFR 260-265, Hazardous Waste Management Regulations	ID-1201-C1 ID-1202-C1 ID-1203-C1
ID-1304-WN	Decontamination and decommissioning of the CPP-603 Fuel Receipt and Storage Facility	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
ID-1305-WN	Decontamination and decommissioning of the Stored Fuel Exterior Waste Tank (SFE-20) and CPP-740 structure	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
ID-1306-WN	Assessment, cleanup, and pre-D&D of CPP-631, -709, -734, and the Chloride Removal System Annex to CPP-603	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
ID-58-EG	Decontamination and decommissioning of Central Facilities Area Hot Laundry Building	DOE Order 5820, Radioactive Waste Management	ID-58E1 ID-58E2
ID-1307-WN	Decontamination and decommissioning of the CPP-640 Building	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
ID-1308-WN	Decontamination and decommissioning of the CPP-601 Spent Fuels Reprocessing Building	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1

New ADS Number	Description	Primary Driver	Old ADS Number
ID-1309-WN	Decontamination and decommissioning of the CPP-633 Waste Calcine Facility	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
ID-1310-WN	Decontamination and decommissioning of the High-Level Liquid Waste Tank Farm storage tanks	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
ID-1311-WN	Perform WINCO post-decontamination and decommissioning surveillance and maintenance activities	DOE Order 5820, Radioactive Waste Management	ID-1301-C1 ID-1302-C1 ID-1303-C1
WASTE MANAGEMENT			
ID-1001-WN	Waste management activities including: <ul style="list-style-type: none"> • High-level waste treatment; • Radioactive and hazardous waste disposal; • Buried/Embedded lines double encasement; • PEW Evaporator operation and maintenance; • CPP-603 Basin water disposal; • INEL RCRA technical support; • WCF pre-decontamination and stabilization; • Acid recycle/high-level waste evaporator support; • Waste minimization/pollution prevention activities; • Waste Process Development; and • High-Level Liquid Waste Tank Farm operation 	DOE Order 5820, Radioactive Waste Management; 40 CFR 260-265, Hazardous Waste Management	ID-1002-C1 ID-1005-C1 ID-1006-C1 ID-1008-C1 ID-1009-C1 ID-1022-C1 ID-1036-C1 ID-1040-C1 ID-1045-C1 ID-1055-C1 ID-1059-C1
ID-1002-WN	ICPP facility operations and maintenance activities including: <ul style="list-style-type: none"> • Plant services; • Initial compliance with new DOE Orders; and • Safety and environmental corrections compliance activities • ICPP Site-Specific Environmental Impact Statement preparation and other NEPA activities; • Operational support, including job control activities; • Plant utilities; • Environmental compliance activities; • Facility engineering support activities; • Safety services; and • Quality assurance support services 	DOE Order 4700, Project Management; DOE Order 5400, Environmental Quality and Impact	ID-1001-C1 ID-1030-C1 ID-1035-C1 ID-1039-C1 ID-1041-C1 ID-1042-C1 ID-1049-C1 ID-1051-C1 ID-1053-C1 ID-1054-C1
ID-1003-WN	Construction of general plant projects, identified 1 to 2 years in advance of need, that are required for continued operation of the ICPP	DOE Order 5820, Radioactive Waste Management	ID-1057-C1 ID-1071-C1
ID-1004-WN	Planning and conceptual design work required to bring identified new facilities to the line item project stage of design and control	DOE Order 5820, Radioactive Waste Management	ID-1003-C1 ID-1019-C1 ID-1023-C1 ID-1032-C1 ID-1047-C1 ID-1060-C1

New ADS Number	Description	Primary Driver	Old ADS Number
ID-1005-WN	Replacement of ancillary High-Level Waste Tank Farm transfer lines, valve box lining, and other equipment. Possible replacement of 5 existing 300,000-gallon storage tanks with 4 new 500,000-gallon storage tanks.	40 CFR 260-265, Hazardous Waste Management	ID-1004-C1
ID-1006-WN	Construction of a system to remove nitrous oxide from the main stack effluent	40 CFR 61, Hazardous Air Pollutants Standards	ID-1015-C1
ID-1007-WN	This ADS has been deleted		
ID-1008-WN	Activities directed toward implementation of the ICPP Spent Fuel/Waste Management Technology Development Plan, including: <ul style="list-style-type: none"> • Systems analysis for proactive decision making; • ICPP sodium bearing waste processing and decontamination technology development; • ICPP HLW Calcine Immobilization development work; • Graphite Fuels Processing technology development work; • Treatment of special fuels; • Development facilities for research and development pilot plant testing; • Work to determine feasibility of the conversion of existing excess facilities for new work; and • Work with recycle metals to determine their suitability for use in waste disposal 	DOE Order 5820, Radioactive Waste Management	None
ID-1101-WN	This ADS covers the costs of transitioning the facilities at the ICPP from the office of Defense Programs to the Office of Environmental Restoration and Waste Management	DOE Order 5400, Environmental Quality and Impact	None

APPENDIX D

ENVIRONMENTAL SURVEILLANCE ACTIVITIES PERFORMED AT INEL WASTE MANAGEMENT FACILITIES

Sample	Description	Frequency of Analysis	Type of Analysis
RADIOACTIVE WASTE MANAGEMENT COMPLEX — SUBSURFACE DISPOSAL AREA			
Air	8 low-volume air samplers operated at 0.14 m ³ /min (includes 1 control and 1 replicate)	Biweekly Biweekly Monthly Quarterly	Gross alpha Gross beta Gamma spectrometry Radiochemistry ¹
Water Surface	4-L samples from Subsurface Disposal Area and control locations	Quarterly, but depends on precipitation	Gross alpha Gross beta Gamma spectrometry Radiochemistry ^{1,2,3}
Subsurface (sampled by the USGS)	2-L samples from each of 6 wells	65-m well annually 183-m wells quarterly Production well quarterly	Gamma spectrometry H-3, Sr-90, Pu-238, Pu-239 Pu-240, Am-241 Specific conductance Chloride, sodium, nitrate
Direct Radiation surface gamma	Truck-mounted VRM-1 detector system	Semiannually	External radiation levels
Ionizing (conducted by RESL and EG&G Idaho)	25 thermoluminescent dosimeter (TLD) packets (EG&G Idaho) and 7 background communities (RESL)	Semiannually	External radiation levels

1. Analysis includes americium 241, plutonium 238, plutonium 239, plutonium 240, uranium 235, uranium 238, and strontium 90.
2. Samples for radiochemical analyses usually taken during second quarter only.
3. Exact number of samples may vary due to availability.
4. Sampling frequency may vary if air radioactivity levels increase.

Sample	Description	Frequency of Analysis	Type of Analysis
Small mammal	3 composites in each of 5 major areas (plus 1 control area) ³	Annually, but species sampled varies each year	Gamma spectrometry Radiochemistry ¹
Soil	5 locations in each of 5 major areas (plus one control area)	Triennially	Gamma spectrometry Radiochemistry ¹
Vegetation	3 composites in each of 5 major areas (plus 1 control area) ³	Annually, but species sampled varies each year	Gamma spectrometry Radiochemistry
Visual inspection	Tour Subsurface Disposal Area and Transuranic Storage Area (TSA)	Monthly	Results reported for any required corrective action
STORED WASTE EXAMINATION PILOT PLANT			
Air	5 low-volume air samplers operated at 0.14 m ³ /min	Biweekly Biweekly Monthly Quarterly	Gross alpha Gross beta Gamma spectrometry Radiochemistry ¹
Water surface	4-L samples from TSA-1, TSA-2, TSA-3, TSA-4, and control locations	Quarterly, but depends on precipitation Monthly	Gross alpha Gross beta Gamma spectrometry
Soil	9 locations plus 2 control areas	Biennially	Gamma spectrometry Radiochemistry ¹
WASTE EXPERIMENTAL REDUCTION FACILITY			
Air	4 low-volume air samplers operated at 0.14 m ³ /min (includes 1 control and 1 replicate)	Biweekly Biweekly Monthly	Gross alpha Gross beta Gamma spectrometry
Direct Radiation	11 TLD packets (EG&G, Idaho) and 7 background communities (RESL)	Semiannual	External radiation levels
Soil	15 surface samples	Triennially ⁴	Gamma spectrometry

1. Analysis includes americium 241, plutonium 238, plutonium 239, plutonium 240, uranium 235, uranium 238, and strontium 90.

3. Samples for radiochemical analyses usually taken during second quarter only.

4. Exact number of samples may vary due to availability.

4. Sampling frequency may vary if air radioactivity levels increase.

Sample	Description	Frequency of Analysis	Type of Analysis
Vegetation	15 locations (includes 3 control areas)	Triennially	Gamma spectrometry
MIXED WASTE STORAGE FACILITY			
Air	1 low-volume air sampler operated at 0.14 m ³ /min	Biweekly Biweekly Monthly	Gross alpha Gross beta Gamma spectrometry
STATIONARY LOW-POWER REACTOR 1			
Surface gamma	Truck-mounted VRM-1	Semiannually	External radiation levels
Visual inspection	Tour SL-1	Semiannually	Results reported for any required corrective action
ORGANIC MODERATED REACTOR EXPERIMENT			
Surface gamma radiation	Truck-mounted VRM-1 detector system	Annually	External radiation levels
Visual inspection	Tour OMRE	Quarterly	Results reported for any required corrective action

1. Analysis includes americium 241, plutonium 238, plutonium 239, plutonium 240, uranium 235, uranium 238, and strontium 90.
2. Samples for radiochemical analyses usually taken during second quarter only.
3. Exact number of samples may vary due to availability.
4. Sampling frequency may vary if air radioactivity levels increase.

APPENDIX E

NEPA DOCUMENTATION REQUIREMENTS

New ADS Number	Description	Old ADS Number	Anticipated Documenta- tion ¹	NEPA Schedule
ANL-W				
CORRECTIVE ACTIVITIES				
CH-1603	Underground Storage Tanks Upgrades	CH-1503-AB	CX	FY 1988
	Liners-Radioactive Scrap and Waste Facility RCRA Compliance Permit; Radioactive Scrap and Waste Facility RCRA Permit Application and Upgrades	CH-1509-AA; CH-1519-AA	CX CX	FY 1990 FY 1990
ENVIRONMENTAL RESTORATION				
CH-1702	Characterize Land Disposal Units and Solid Waste Management Units identified in accordance with the INEL FFA/CO	CH-1501	EIS (ER/WM)	FY 1995
CH-1701	Historical PCB spill cleanup	CH-1507	CX	FY 1991
CH-1703	Surveillance and Maintenance for the Central Liquid Processing Area (Building 752) prior to D&D	CH-1514-AC	CX	FY 1988
CH-1703	Decontaminating and Decommissioning the Central Liquid Waste Processing Area (Building 752)	CH-1515-AC	EA	FY 1993

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
CH-1700	Environment, Safety, and Health Agreement-in-Principle	CH-1522	None	
CH-1700	Tiger Team Findings Corrections for Environmental Area	CH-1524-AD	TBD	
WASTE MANAGEMENT				
CH-1604	Radioactive Sodium Waste Process Facility	CH-1505-AA	EIS (ER/WM)	FY 1995
CH-1601	Radioactive Waste Disposal	CH-1506; CH-1506-01	None None	
CH-1601	Hazardous Waste/Low-Level Mixed Waste Operations	CH-1508; CH-1508-01	None None	
CH-1601; CH-1602	Radioactive Scrap and Waste Facility Operations	CH-1510-AA; CH-1510-01; CH-1518-AA	CX None CX	FY 1990 FY 1990
CH-1601	PCB Capacitors Disposal	CH-1512	None	
CH-1601	Shielded Hot Air Drum Evaporator for treatment of radioactive liquid waste	CH-1513	None	
CH-1602	Underground Storage Tanks Upgrades	CH-1517-AB	CX	FY 1993
CH-1602	Laboratory and Office Building Radioactive Liquid Transfer Line	CH-1523	CX	FY 1992
CH-1601	Tiger Team Findings Corrections for Waste Management Area	CH-1525-AD	TBD	
CH-1601	Hazardous Materials Training and Determination	CH-1527	None	
CH-1601	Waste Minimization	CH-1528	None	
CH-1601	Environmental Restoration/Waste Management Program Support	CH-1529	None	
CH-1601	PCB Inventory of ANL-W Site	New	None	

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
CH-1601	Part B Permit Application for FERMI Sodium Storage Facility	New	None	
CH-1605	Waste Handling Facility	New	EA	FY 1994
EG&G				
ENVIRONMENTAL RESTORATION				
ID-28-EG	WAG 1 - TAN Assessment/cleanup Integrated RI/FS and EA	ID-28-E1; ID-28-E2	EA	FYs 1992- 1996
ID-30-EG	WAG 2 - TRA Assessment/cleanup Integrated RI/FS and EA	ID-30-E1; ID-30-E2	EA	FYs 1992- 1999
ID-34-EG	WAG 4 - CFA Assessment/cleanup Integrated RI/FS and EA	ID-34-E1 ID-34-E2	EA	FYs 1995- 2000
ID-36-EG	WAG 5 - PBF and ARA Assessment/cleanup Integrated RI/FS and EA	ID-34-E1; ID-34-E2	EA	FY 2001
ID-38-EG	WAG 6 - EBR-1/BORAX Assessment/cleanup Integrated RI/FS and EA	ID-36-E1; ID-36-E2	EA	FYs 1995- 1996
ID-40-EG	WAG 7 - RWMC/Buried Waste Program Integrated RI/FS and EA	ID-40-E1; ID-40-E2	EA	FYs 1992- 1998
ID-41-EG	WAG 10 - Misc. Units Assessment/Cleanup Integrated RI/FS and EA	ID-41-E1; ID-41-E2	EA	FYs 1992- 1998
ID-45-EG	Surveillance and Maintenance D&D	ID-45-E1	None	

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
ID-46-EG	Army Re-Entry Vehicle Facility Site/NAK D&D Cleanup	ID-46-E1	TBD	
ID-48-EG	ARA II D&D	ID-48-E2	EA	FY 1993
ID-49-EG	ARA III D&D	ID-49-E1	EA	FY 1993
ID-50-EG	Water Reactor Research Test Facility Hot Waste Tank	ID-50-E1	TBD	
ID-51-EG	TAN Technical Support Facility D&D	New ADS	EA	FY 1994
ID-52-EG	ARA I D&D	ID-52-E1; ID-52-E2	None EA	FY 1995
ID-53-EG	TAN 607 Decon Shop D&D	ID-53-E1; ID-53-E2	None EA	FY 1996
ID-54-EG	Materials Test Reactor D&D	ID-54-E1; ID-54-E2	None EA	FY 1996
ID-58-EG	CFA - Hot Laundry D&D	ID-58-E1; ID-58-E2	CX	FY 1992
ID-60-EG	Engineering Test Reactor D&D	ID-60-E1; ID-60-E2	EIS	FY 1996
ID-63-EG	BORAX-V D&D	ID-63-E1	EA	FY 1993
ID-64-EG	SPERT IV Waste Holdup Tank and Piping	ID-64-E1	CX	
ID-65-EG	LOFT Ancillaries D&D	ID-65-E1; ID-65-E2	CX	
ID-67-EG	Test Train Assembly Facility D&D	ID-67-E1; ID-67-E2	EA	FY 1995
ID-102-EG	Inactive Underground Storage Tanks	ID-102-E3	EC	FY 1992

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
ID-103-E1	INEL ER Tiger Team	ID-103-E1	N/A	
ID-111-E1	Program Support to ER			
ID-112-E1	FFA/CO Grant to Idaho	ID-112-E1	N/A	
ID-112-E2	Shoshone-Bannock Agreement	ID-112-E2	N/A	
WASTE MANAGEMENT				
ID-4103-EG	Waste Minimization (Pollution Prevention)	ID-20-E1	CX	FY 1992
ID-4104-EG	Agreements-in-Principle ISU Monitoring State Oversight Agreement INEL Support to SOA	ID-19-E1 ID-19-E2 ID-19-E3	CX CX None	TBD TBD --
ID-4301-EG	Facility Operations and Maintenance Implementation of DOE Order 5820.2A DOE Compliance Operations Support Upgrade to Waste Management SARs Mixed Waste Compliance Independent Safety Review Committee Planning and Integration Hazardous Waste Shipping Moratorium Private Sector Participation INEL Waste Management Roadmap Environmental Monitoring Transportation Compliance Waste Management NEPA Regulatory Compliance Office Active Regulated Underground Storage Tanks Active Non-regulated Underground Storage Tanks	ID-3-E1 ID-6-E1 ID-7-E1 ID-9-E1 ID-11-E2 ID-12-E1 ID-15-E1 ID-15-E1A ID-15-E1B ID-15-E1C ID-16-E1 ID-69-E1 ID-76-E1 ID-76-E2 ID-102-E2 ID-102-E4	EIS (ER/WM)	FY 1995
ID-4302-EG	New Facilities Planning Mixed/Low-Level Waste Disposal System Mixed/Low-Level Waste Treatment Facility Idaho Waste Processing Facility Hazardous Waste Storage Facility	ID-5-E1 ID-5-E2 ID-14-E1 ID-21-E2	EIS (ER/WM) EIS (ER/WM) EIS (ER/WM) EA	FY 1995 FY 1995 FY 1995 FY 1995
ID-4303-EG	General Purpose Plant	ID-22-E1	CX/EA	FY 1997

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
ID-4307-EG	Dry Cask Storage of Spent Fuel	ID-25-E2	EA	FY 1993
ID-4308-EG	Transuranic Storage Area Retrieval Enclosure Facility	ID-101-E1	EA	FY 1992
ID-4309-EG	Waste Characterization and Storage Facility	ID-101-E2	EA	FY 1993
ID-4310-EG	Waste Reduction Operations Complex Waste Experimental Reduction Facility Hazardous and Mixed Waste Support	ID-1-E1 ID-18-E1	EA	FY 1993
ID-4311-EG	Radioactive Waste Management Complex Low-Level Waste Operations Low-Level Waste Technical Programs Transuranic Waste Operations Transuranic Waste Technical Programs Transuranic Waste Examination, Certification, and Venting Transuranic Waste Retrieval Operations	ID-2-E1 ID-2-E2 ID-8-E1 ID-8-E2 ID-8-E3 ID-8-E5	EIS (ER/WM)	FY 1995
ID-4312-EG	Test Area North Process Experimental Pilot Plant Standby Maintenance and Operations of TAN Hot Shop Spent Fuel Management	ID-10-E1 ID-25-E1 ID-25-E3	None EIS (ER/WM) EIS (ER/WM)	-- FY 1995 FY 1995

WINCO**CORRECTIVE ACTIVITIES**

ID-1009-WN	Double encasement of single encased buried/embedded radioactive and hazardous waste transfer lines at ICPP	ID-1028-C1	EA	FY 1992
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ENVIRONMENTAL RESTORATION

ID-1204-WN	Assessment and remediation activities of 13 Operable Units containing 83 hazardous/radioactivity sites at the ICPP	ID-1201-C1 ID-1202-C1 ID-1203-C1	EA	FY 1992
ID-1304-WN	Decontamination and decommissioning of the CPP-603 Fuel Receipt and Storage Facility	ID-1301-C1 ID-1302-C1 ID-1303-C1	EA	FY 1998
ID-1305-WN	Decontamination and decommissioning of the Stored Fuel Exterior Waste Tank (SFE-20) and CPP-740 structure	ID-1301-C1 ID-1302-C1 ID-1303-C1	EA	FY 1994

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New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
ID-1306-WN	Assessment, cleanup, and pre-D&D of CPP-631, -709, -734, and the Chloride Removal System Annex to CPP-603	ID-1301-C1 ID-1302-C1 ID-1303-C1	CX	FY 1993
ID-1307-WN	Decontamination and decommissioning of the CPP-640 building	ID-1301-C1 ID-1302-C1 ID-1303-C1	EA	FY 1994
ID-1308-WN	Decontamination and decommissioning of the CPP-601 Spent Fuels Reprocessing Building	ID-1301-C1 ID-1302-C1 ID-1303-C1	EA	FY 1998
ID-1309-WN	Decontamination and decommissioning of the CPP-633 Waste Calcine Facility	ID-1301-C1 ID-1302-C1 ID-1303-C1	EA	FY 1993
ID-1310-WN	Decontamination and decommissioning of the High-Level Liquid Waste Tank Farm storage tanks	ID-1301-C1 ID-1302-C1 ID-1303-C1	EA	FY 2000
ID-1311-WN	Perform WINCO post-decontamination and decommissioning surveillance and maintenance activities.	ID-1301-C1 ID-1302-C1 ID-1303-C1	CX	FY 1993

WASTE MANAGEMENT

ID-1001-WN	Waste management activities including: <ul style="list-style-type: none"> • High-level waste treatment; • Radioactive and hazardous waste disposal; • Buried/Embedded lines double encasement; • PEW Evaporator operation and maintenance; • CPP-603 Basin water disposal; • INEL RCRA technical support; • WCF pre-decontamination and stabilization; • Acid recycle/high-level waste evaporator support; • Waste minimization/pollution prevention activities; • Waste Process Development; and • High-Level Liquid Waste Tank Farm operation. 	ID-1002-C1 ID-1005-C1 ID-1006-C1 ID-1008-C1 ID-1009-C1 ID-1022-C1 ID-1036-C1 ID-1040-C1 ID-1045-C1 ID-1055-C1 ID-1059-C1	EIS (ER/WM)	FY 1995
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¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documentation ¹	NEPA Schedule
ID-1002-WN	ICPP facility operations and maintenance activities including: <ul style="list-style-type: none"> • Plant services; • Initial compliance with new DOE Orders; • Safety and environmental corrections compliance activities • ICPP Site-Specific Environmental Impact Statement preparation and other NEPA activities; • Operational support, including job control activities; • Plant utilities; • Environmental compliance activities; • Facility engineering support activities; • Safety services; and • Quality assurance support services. 	ID-1001-C1 ID-1030-C1 ID-1035-C1 ID-1039-C1 ID-1041-C1 ID-1042-C1 ID-1049-C1 ID-1051-C1 ID-1053-C1 ID-1054-C1	EIS	FY 1994
ID-1003-WN	Construction of general plant projects, identified 1 to 2 years in advance of need, that are required for continued operation of ICPP	ID-1057-C1 ID-1071-C1	CX	FY 1993
ID-1004-WN	Planning and conceptual design work required to bring identified new facilities to the line item project stage of design and control	ID-1003-C1 ID-1019-C1 ID-1023-C1 ID-1032-C1 ID-1047-C1 ID-1060-C1	EA	FY 1998
ID-1005-WN	Replacement of ancillary High-Level Waste Tank Farm transfer lines, valve box lining, and other equipment. Possible replacement of 5 existing 300,000-gallon storage tanks with 4 new 500,000-gallon storage tanks.	ID-1004-C1	EA	FY 1992
ID-1006-WN	Construction of a system to remove nitrous oxide from the main stack effluent.	ID-1015-C1	CX	FY 1993
ID-1007-WN	This ADS has been deleted.			
ID-1008-WN	Activities directed toward implementation of the ICPP Spent Fuel/Waste Management Technology Development Plan, including: <ul style="list-style-type: none"> • Systems analysis for proactive decision making; • ICPP sodium bearing waste processing and decontamination technology development; • ICPP HLW Calcine Immobilization development work; • Graphite Fuels Processing technology development work; • Treatment of special fuels; • Development facilities for research and development pilot plant testing; • Work to determine feasibility of the conversion of existing excess facilities for new work; and • Work with recycle metals to determine their suitability for use in waste disposal. 	None	EIS (ER/WM)	FY 1995

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

New ADS Number	Description	Old ADS Number	Anticipated Documenta- tion ¹	NEPA Schedule
ID-1101-WN	This ADS covers the costs of transitioning the facilities at the ICPP from the Office of Defense Programs to the Office of Environmental Restoration and Waste Management.	None	*	*

* Prior year NEPA analyses shown have been completed and approved.

¹CX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement; TBD = To Be Determined.

APPENDIX F

RESPONSE TO PUBLIC INPUT

INTRODUCTION

The goal of this appendix is to identify the major public concerns received on the Draft SSP and to convey how these concerns were addressed as the SSP developed from draft to final.

After the Draft SSP was released, informal public meetings were held in Idaho Falls, Pocatello, Twin Falls, Boise, and Moscow. A facilitator fielded questions and comments from the audience, and the input was recorded on flip charts. By removing the process of having a formal panel presentation and subsequent testimony, all transcribed by a court reporter, DOE-ID hoped to remove potential barriers to open communication. This more relaxed format was generally accepted by both DOE-ID and the public as being more productive than previous formats, although some concern was expressed about not having a court reporter present.

The following comments and questions from the public on the Draft SSP are summarized from input received during the meetings or in writing. The comments are grouped by subject matter, so that comments from several different sources may be addressed and responded to at one time. This

method also indicates which comments were more commonly heard. Each comment is followed by one or more alphanumeric codes indicating the source of the comment (see Table F-1). The first part of the code is the general source (i.e., "B" for public meeting in Boise, "W" for written comments). Written comments are also numbered in the order in which they were received (i.e., "W1" for the first written comment received, "W5" for the fifth.) The second part of the code is a number indicating the order in which the comment was broken out of the source document (i.e., "-1" for the first comment recorded on the flip chart at the public meeting, "-15" for the fifteenth comment in a written letter). An index of comments by source is available at the end of this appendix.

In addition, copies of all public input received on the Draft SSP will be available for public review in the INEL Information Repositories. This will include the comments recorded on flip charts at the five public meetings and all written submissions received at the public meetings or in the mail. Comments are accompanied by a series of indexes which allow the reader to determine where each distinct comment was summarized into this appendix and responded to.

Source of Comment	Code
Boise public meeting (comments recorded on flip chart)	B-#
Idaho Falls public meeting (comments recorded on flip chart)	IF-#
Moscow public meeting (comments recorded on flip chart)	M-#
Telephone briefing with Moscow residents (September 22, 1992)	MB-#
Pocatello public meeting (comments recorded on flip chart)	P-#
State of Idaho written comments	S-#
Twin Falls public meeting (comments recorded on flip chart)	TF-#
Written comments received at the public meetings and written comments received by Jerry Lyle, DOE-ID, during the formal public comment period	W#-#

Table F-1. Comment Code Correlation.

In reviewing public input, DOE-ID paid particular attention to how the Draft SSP could be changed in response to the issue or concern that was raised. In many cases, this simply required providing a written answer in this appendix. In other cases, responses resulted in significant redrafting of entire sections of the final SSP to clarify information or add missing details. Where possible, responses

serve to answer the questions and concerns voiced by the public and identify how the final SSP was changed to address these concerns.

Location of Comments by Category

Table F-2 correlates the subject matter of the comment, the response number, and the page in this appendix on which the response can be found.

Category	Response Number	Page
Site-Specific Plan	1	F-3
Agreements and State Involvement	16	F-6
Budget/Funding Issues	21	F-7
Public Involvement		
Proposed Working Group	39	F-11
Other Public Participation Issues	44	F-13
Roadmapping	60	F-17
Environmental Restoration	63	F-18
Waste Management		
General	78	F-21
Waste Minimization	100	F-25
Waste Classification	103	F-26
Waste Storage and Transportation	108	F-27
Waste Disposal	119	F-30
Waste Treatment	131	F-33
Technology Development	141	F-35
Labor/Contractor Issues	144	F-36
Other Concerns	147	F-36
DOE Headquarters Comments	HQ1	F-39

Table F-2. Location of Comments by Category.

PUBLIC INPUT AND RESPONSES

Site-Specific Plan

1. Is there information within the Fiscal Year (FY) 1993 SSP depicting the INEL's role in supporting other DOE sites? (IF-2)

The focus of the SSP is to identify environmental restoration (ER) and waste management (WM) efforts at the INEL. In some cases INEL programs support the entire DOE complex; other programs are specific to this site. Many of the projects supported by the Technology Development Program are being supported by other sites so they may share in the benefits of INEL's research. Robotics technologies is one example of a technology being shared with other sites. This research is being done to further DOE's understanding of robotics as it applies to ER and WM efforts being undertaken nationally.

2. Releasing a draft version rather than a final is a positive step. Appreciation was also expressed at the inclusion of a list of acronyms and a glossary. (P-9, M-43, W7-3, W11-1, S1-1)

The decision to release the SSP in draft form was in direct response to comments on previous SSPs stating that the public should be given an earlier opportunity to comment on DOE-ID's plans. The glossary and list of acronyms were added in response to suggestions made in previous years. By releasing the SSP while it was still in draft form, DOE-ID was able to incorporate the public's comments and concerns into this year's final. The result is a higher-quality document and more responsive document.

3. Releasing the Draft SSP before budget numbers could be included was premature. The Draft SSP is a regression from previous Five-Year Plans, which gave budget projections for the five-year period. (M-8, W5-2, W10-1, W11-2, S1-7, S1-14, S2-2, S2-8)

While DOE-ID would have preferred to release the Draft SSP with funding numbers included, the

Office of Management and Budget restricts this information from publication before the release of the Five-Year Plan. The importance of obtaining public input on the draft scope and schedule of DOE-ID's plans was considered to be a higher priority when weighed against the limitations of releasing the draft without budget figures. Funding information by program and waste area group is included in the final SSP.

4. What is the SSP and how does it relate to specific, planned cleanup activities in the coming year? The SSP should document, in detail, what activities were done in FY 1992 versus what activities were planned, as well as what activities are planned for FY 1993. (P-13, TF-7, M-3, M-30, S1-11)

The purpose of the SSP is detailed in the "Foreword" and in Chapter 1, "Introduction to the INEL Site-Specific Plan." In response to questions pertaining to what specific activities are planned, DOE-ID has added Appendix B, in which ER and WM plans for FY 1993 are detailed. Additionally, in Chapter 5, "Environmental Restoration," and Chapter 6, "Waste Management," specific activities for FY 1993 are called out separately. This information was added in response to the specific concerns raised above.

5. The receipt of spent fuel and the impacts of spent fuel on the INEL and its WM program should be considered in roadmapping and discussed in the SSP. For example, Table 6-1 does not include spent fuel from INEL reactors nor does it include all spent fuel arriving from off site. Not having details on waste and spent fuel sources in the SSP gives the public a blank slate that should be filled, as these wastes and sources affect WM activities. (B-10, B-13, W5-6, W5-11, S2-19)

Spent fuel management is part of the roadmapping process. A listing of spent nuclear fuels to be received at the INEL is provided in Table F-3 below:

Fuel Type	Owner/Source
Argonne National Laboratory Converted Cylinder	DOE/Argonne National Laboratory
Argonne Thermal Source Reactor	DOE/Argonne National Laboratory
Australian High Flux Reactor	Australian Atomic Energy Commission
Brookhaven National Laboratory High Flux Beam Reactor	DOE/Brookhaven Reactor
Public Service Company of Colorado Fort St. Vrain	Fort St. Vrain
Iowa State University	DOE/Iowa State University
Italian ENEA Training, Research, and Isotope Reactor	Italian TRIGA
Los Alamos Laboratory Omega West Reactor	DOE/Lawrence Livermore Laboratory
Puerto Rican Nuclear Center Training, Research, and Isotope Reactor	Puerto Rican Research Center
Hanford Training, Research, and Isotope Reactor	DOE/Hanford
Metals, paper, glass, wood, cloth	DOE/Argonne National Laboratory
Tritium Extraction Wastes (New production Reactor)	New Production Reactor/CEGA Corporation

Table F-3. Spent Fuel Shipments and Sources.

This list includes all spent nuclear fuels except Navy fuels. It is anticipated that Navy fuel shipments will continue in the future. The increase or decrease of Navy fuel shipments to the INEL depends on changes in fleet size and operating tempo, and the introduction of longer-life cores into the fleet. A projected increase in defueling of Naval vessels in the coming years will undoubtedly affect the pace of fuel shipments, although specific increases or decreases will be primarily dictated by the Navy's operational requirements for force levels of nuclear powered warships and reactor fuel lifetime in the fleet.

6. Naval Reactor Facility (NRF) wastes are not included in the SSP. Is any NRF waste included in the SSP? The NRF should be included in the graph of waste types and amounts that each contractor generates. (B-11, W5-3, S1-19, S2-20)

While NRF operations and waste generation are outside the scope of the SSP, NRF does generate wastes that are managed by DOE-ID; those wastes are included in the plan. NRF generates solid municipal waste, low-level waste, and small quantities of hazardous waste. Once these wastes have been transferred to DOE-ID for treatment, storage, and disposal, they become part of the SSP

and are included in the waste stream discussions in Chapter 6, "Waste Management." NRF has been added to Table 6-1, which identifies waste streams by generator in response to this comment.

7. Why isn't NRF in the SSP? NRF has a CERCLA site and the INEL provides landlord, WM, and other ER and WM activities that support NRF; therefore, NRF should be included in the SSP. (M-15, W5-3, S1-19, S2-4)

NRF wastes transferred to other INEL activities are included in the SSP as noted above in Comment 6. NRF operations related to the SSP are included in this document. NRF has no significant environmental restoration or waste management liabilities requiring additional funding above and beyond this Naval operating budget, therefore no SSP is required for its work.

8. The SSP needs to be a more candid and, where appropriate, more technical document. Identify places where assumptions have been made and acknowledge the uncertainty of those assumptions. Also provide a discussion of contingencies, alternatives, and interim measures if assumptions are not met. In the future, the SSP should:

include more specifics, include less wishful thinking; include more truth, with full disclosure; state the assumptions of the document clearly; state waste destinations honestly; identify gaps in the data; and remove the secrecy that relates to defense. (B-45, B-46, B-47, M-18, M-25, M-28, W7-2, S1-8, S2-6)

DOE-ID views the SSP as a mechanism for informing and involving the public in its ER and WM plans. This function requires DOE-ID to strike a balance between providing adequate detail for the public to make meaningful comment while not getting bogged down in excessive detail that is available elsewhere in the INEL Information Repositories. DOE-ID acknowledges the comments requesting additional detail and full disclosure, and providing clear statements of assumptions in areas where this information is lacking.

Many changes were made to the final SSP to accommodate this request. The discussions about final disposal of transuranic waste, high-level waste, and spent fuel have all been reworked to provide more information regarding the uncertainty of these facilities. DOE-ID planning assumptions are now called out in boxes labeled "Assumption" added to the text. DOE will continue to strive to provide information accurately and clearly regarding its assumptions, plans, and limitations so that the public can play a more informed role in providing input on DOE-ID's plans.

9. Any use of percentages in tables or graphs should indicate what the number is a percentage of, and the total. (M-21)

All references to percentages have been reviewed to ensure they provide a reference to the raw numbers.

10. Translate the information from the SSP into more useful matrices. (M-38)

Appendix B from the Draft SSP has been replaced by a new Appendix B, which was prepared in response to this comment. This new appendix identifies the FY-1993 environmental restoration activities for each operable unit in a concise matrix. Appendix C has been revised to identify only the

primary drivers affecting each Activity Data Sheet (ADS), rather than naming every possible regulatory driver acting on each ADS.

11. DOE-ID must identify the originally designated corrective activities now transferred to WM or ER and the status of these projects. (S1-25)

DOE-ID is currently using the Compliance Management System to track corrective actions. This computerized system enables DOE-ID to identify any of the designated corrective actions as to responsibility and status. The FY-1992 SSP identified two corrective activities that were to be completed after the end of FY 1992: the ICPP Environmental Corrective Activities, which were transferred to WM at the end of FY 1992 and are scheduled to be completed by FY 1997; and the ANL-W Radioactive Scrap Waste Facility Resource Conservation and Recovery Act (RCRA) permit application, which was not transferred to WM because it was scheduled to be completed by FY 1993. Both activities are discussed in detail in Chapter 4, "Corrective Activities and Transition Activities."

12. There aren't any references to sources of information that support the plans in the SSP. The most relevant portions of the ADSs are missing. The FY-1993 SSP should concentrate on fully describing each ADS and how it fits into the milestones, the five-year goals, and the long-term vision for the site. (M-4, M-41, W5-5, S1-13)

Plans in the SSP are cross-referenced with ADSs as footnotes on applicable pages of the SSP. While these ADSs were not available at the time of publication of the Draft SSP, the FY-1993 ADSs are now available in the INEL Information Repositories. ADSs provide the detail on which the SSP is built. DOE-ID endeavored to pull the most relevant information (milestones, project descriptions, and regulatory drivers) from the ADSs.

13. The SSP does not appear to be a planning document. "Plan" refers to a path describing the originating situation with an explanation of how to get to a new situation in some time frame. A

planning document should be in a format that is more usable to the public. Irrelevant information can be left out of the SSP. The document should focus on FY-1993 ER and WM activities. DOE should provide the public with something more useful to comment on. (TF-6, M-42, M-45, M-51, W5-1, W7-1, S1-12, S2-59)

In an effort to provide the background and context of its plans, part of the SSP has relegated to the appendixes. The matrices contained in Appendix B provide the core of DOE-ID's FY-1993 ER plans. In response to this comment, a greater effort has been made to call out what is planned for FY 1993 in each chapter of the final SSP.

14. The Cold War is over, yet the SSP identifies defense-related support to the government as a key mission. Rather than continue to create radioactive waste, INEL should have a mission of supporting ER. (W10-7)

Although the Cold War is over, there are still defense-related areas that the INEL supports at the direction of the President and Congress. As mentioned in Chapter 1, "Introduction to the Site-Specific Plan," the INEL still provides support to the U.S. Army's M1A1 tank program and general assistance in handling government-owned nuclear fuels for all U.S. armed services. These support roles are not restricted to Cold War military activities; they continue to be of value to the armed services and national security.

As an executive agency DOE receives direction from the President and funding from Congress. Public concerns regarding necessary changes in the mission of DOE-ID should be directed at these entities since DOE-ID implements their decisions. The largest single portion of funding goes toward ER and WM as demonstrated by the INEL's operating budget (see Figure 1-1). This marks a trend over the last several years of more and more funding being directed away from defense programs and toward ER, reflecting a change not only in DOE's priorities but also in the priorities of the country as expressed by Congress.

15. Goals and milestones in the FY-1992 SSP versus the FY-1993 SSP change without explanation, particularly in Chapter 6, "Waste Management." The FY-1993 SSP should give a detailed explanation whenever something has changed. (S1-9, S2-1, S2-3)

In response to this comment, plans in the FY-1993 SSP were closely compared to those in last year's SSP (FY 1992). Significant changes are identified in "Changes from the FY-1992 SSP" boxes to call attention to the difference and provide a brief explanation of what has changed and why.

Agreements and State Involvement

16. If DOE/INEL ceases to be, what happens? Does the state of Idaho take over regulatory responsibility? (P-1)

The state of Idaho currently maintains regulatory oversight over the INEL. DOE manages INEL operations and programs in accordance with both federal and state regulations. If the federal government no longer supported continued operations at the INEL, DOE would transition the administration and management functions of the INEL in accordance with a transition plan acceptable to all agency and public stakeholders. The "Transition Activities" section of Chapter 4 focuses on how DOE-ID intends to transition some of its facilities from defense production missions to ER and WM missions. Additionally, DOE-ID is beginning to consider future land uses in its long-term planning activities. There is no indication that INEL operations will cease but if they do, DOE-ID would take steps for adequate transition, ensuring that all cleanup activities are completed or transitioned in a responsible manner.

17. What is the State's responsibility at INEL? (P-27)

In Chapter 1, "Introduction to the Site-Specific Plan," there is a description of the State Monitoring Agreement between the state of Idaho and DOE-ID. This voluntary agreement was developed to assure the citizens of Idaho that their health and safety and the environment are being protected through various programs and activities including the Federal Facility Agreement and Consent Order (FFA/CO); independent monitoring

of on-site discharges, groundwater, air quality and off-site radioactivity; waste minimization planning; evaluation of source reduction methods to reduce or eliminate INEL discharges of contaminants into the environment; risk assessment of current and proposed activities; and accelerated remediation activities if warranted by health and technical considerations. The state of Idaho Department of Health and Welfare performs many of the same functions as the U.S. Environmental Protection Agency (EPA) and is responsible, along with the EPA, for ensuring compliance with RCRA. The state is a party to the FFA/CO and functions as the lead regulatory agency assigned to Waste Area Group 7. Funding is provided to the state by DOE to support state performance of FFA/CO responsibilities.

18. The Idaho Falls Chamber of Commerce continues to endorse cooperation between the state of Idaho, DOE-ID, and the EPA in cleaning up the INEL. (W1-1)

DOE-ID appreciates the support and services provided by communities surrounding the INEL.

19. Early involvement by state regulators in planning for ER and WM activities would identify possible resource problems and regulatory conflicts. For example, the Hazardous Waste Storage Facility application is being reviewed by state permitting staff. The FY-1993 SSP says this facility will be closing and another facility will be operating. This conclusion conflicts with previous commitments made to the state. This may be a result of internal communication problems at DOE-ID. (S2-17)

DOE-ID has and will continue to seek earlier involvement with the state on the SSP and related issues. DOE has shared drafts of roadmaps and ADSs with the state in the past and will try to find other ways to appropriately involve the state earlier in the planning and decision-making process. The example cited was a misunderstanding of the proposed time frame for the "new" hazardous waste storage facility. The new facility is a proposed long-term future replacement for the facility now in the permitting process. Catching

this type of misunderstanding is another example where circulation of a draft SSP has proven to be of value to all concerned.

20. The FFA/CO requires certain activities, which require funding. Are these budgets/funds requested or approved? What happens to the FFA/CO if funds fall short? Not seeing specific numbers in the SSP is a problem. (P-6, TF-8)

The ER program is outlined in Chapter 5. The role of the FFA/CO is discussed with emphasis on DOE's commitment to meeting the agreements established in the FFA/CO. DOE has requested the funding necessary to accomplish these commitments, and funds are expected to be appropriated from Congress to meet these requests. If funding authorizations by Congress should fall short of requested levels, DOE would aggressively work toward reallocating funding to key areas or attempting to renegotiate commitments in the FFA/CO. Section 28.5 of the FFA/CO has a contingency which states "if appropriated funds are not available to fulfill DOE's obligations under this Agreement, the Parties shall attempt to agree upon appropriate adjustments to the dates that require the payment or obligation of such funds." From past history, DOE does not expect the necessity of such actions. The lack of specific numbers is addressed in response to Comment 21 below.

Budget and Funding Issues

21. Where are the FY-1992 and FY-1993 dollar amounts in the FY-1993 SSP? Some of these numbers have already been released, and were offered in previous public documents including the FY-1992 SSP. The DOE is required by legislation to provide this information. (IF-1, P-10, M-1, M-17, W5-5, W11-2, S1-15, S2-8)

The SSP is intended to give details on the year approaching appropriation, in this case FY 1993. The dollar figures for FY-1993 activities are identified in this final version within funding tables for each program and Waste Area Group. Office of Management and Budget restrictions, however, prohibited the inclusion of budget figures at the time the Draft SSP was released. While the SSP

outlines future plans, the focus is on FY-1993 funding estimates for FY-1993 activities and dollars along with reference to FY-1992 expenditures for comparison.

22. Are all plans in the SSP funded? (P-7)

All efforts outlined as FY-1993 Planned Activities are funded. Future plans are based on requested funding levels subject to Congressional approval.

23. If DOE-ID receives a large budget but does not use the entire allocation, what happens to the remaining dollars? The public will pay for appropriate activities, but doesn't want excess. (P-11, P-12)

If a scope of work is completed under budget, remaining funds are returned to DOE-HQ for allocation to other activities.

24. Are landlord activities funded out of a set cleanup budget? Why don't landlord activities come out of the production budget? Are landlord funds not necessarily cleanup or maintenance funds? Landlord activities should be funded out of a general, on-going operational budget. (TF-2, TF-4, W10-5, S1-18)

Landlord activities operate common-use facilities not uniquely associated with a particular program. Throughout the DOE Complex, landlord responsibilities reside with the program that operates a given facility. At the INEL, several programs exist that operate various facilities. Since the ER and WM program maintains the largest share of activities at the INEL, the common-use facilities fall under ER and WM landlord responsibility. As with any program, landlord funding is broken down by project.

25. Where does DOE-ID balance new projects with required maintenance activities in its budget? What is the difference between landlord activities and other maintenance operations? (TF-3, S1-18)

Maintenance activities are included as part of each facility's operating budget. Considerations for new facilities are made on the basis of required

technology enhancements or expanding capacity requirements. Landlord activities operate common-use facilities not uniquely associated with a particular program. Maintenance efforts are performed at all facilities to ensure safe operations and to prolong facility use.

26. Does the WM budget only cover waste generated on site? Does it include Superfund money? (B-7)

The majority of INEL WM funding is directed to management of INEL's waste inventory including the costs of treatment, storage, and disposal. Much of INEL's inventory of waste is waste that was generated off-site. Additionally, some funding is provided to cover larger, DOE complex-wide issues that will ultimately affect the INEL.

Because INEL is a federal facility, funding for Superfund cleanup is provided by Congress to DOE for environmental restoration activities. The ER program is driven by the Superfund law. No Superfund or ER monies are used to fund WM activities unless the activity is a result of cleanup under the ER Program.

27. How much of the DOE budget is cleanup activity, how much is operations and new projects, and how much is devoted to defense programs? How much of the ER and WM budget is ER and how much is WM? What is the percentage breakdown of the ER and WM budgets? Provide this breakdown in the final. The suggested 50/50 percentage breakdown between the ER and WM budget is questionable. Greater details of the breakdown need to be provided. Separate the ER and WM budgets. (B-39, B-40, M-19, M-20, M-22, W5-4, W5-23, W10-4, W10-5)

In FY 1993, \$91 million (19% of the total INEL operating budget) has been authorized for ER activities and \$333 million (or 69% of the total operating budget) has been authorized for WM activities. While a significantly greater proportion of funds are designated for WM, these funds ensure that WM activities do not generate more waste to be cleaned up in the future. In addition, nearly \$55 million of the WM funding supports design and construction of new facilities for treatment,

storage, and disposal of the waste generated from cleanup efforts.

This Plan covers only ER and WM activities for the INEL; it does not cover non-ER or non-WM programs, such as defense programs, which account for the remaining 12 percent of INEL's operating budget. The relationship of ER and WM funding to other INEL programs is presented in Figure 1.1. Information regarding ER and WM planning for the entire DOE complex can be found in the U.S. Department of Energy Environmental Restoration and Waste Management Five-Year Plan, a copy of which may be obtained from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia, 22161. Copies are also available for review at the INEL Information Repositories listed in Table 3-1 labeled as Binder 700, Section 710, document numbers 710.3 and 710.4.

28. More funding should be directed toward research and development and less toward moving waste from site to site in one form or another. DOE needs to look into the future. (B-43, B-44, W11-3)

Because the benefits derived from research and development projects conducted by the INEL extend well beyond its borders, a significant portion of the research and development budget is funded by the DOE-Headquarters Office of Technology Development. In FY 1992, the INEL received approximately \$31 million for ER and WM research and development. Ultimately, the Congress determines which programs receive funding.

29. The format of the SSP should be consistent. If the discussion is broken down by Operable Units (OUs), funding should be broken down by OU also. Combine specific funding information with graphs. (M-2, M-39)

Planning information presented in the SSP is gathered from Activity Data Sheets (ADSs), DOE's basic planning documents. Because information in the ADSs is broken down by Waste Area Groups, funding information is only available at this level. However, specific cleanup activities, schedules, and other planning details are documented at the

Operable Unit level; thus, this information is presented in more detail. Funding information by Waste Area Group and planned activities by Operable Unit is included in Chapter 5, "Environmental Restoration." Additional information on funding is presented in Appendix A; the ADSs are available at the Information Repositories (the locations of which are included in Table 3-1).

30. On pages 73 and 74 of the Draft SSP, the bar chart should include dollar amounts and a description of activities for each fiscal year. (M-50)

Funding information for FYs 1992 and 1993 is presented for each Waste Area Group in Chapter 5, "Environmental Restoration." Funding information by Activity Data Sheet is presented in Appendix A.

31. The SSP does not show any accounting and formal commitment to break down how dollars were or were not spent. DOE should provide an accounting to the nearest \$10,000 of how it spends its budget. (M-13, S2-8)

Because the SSP is a planning document, its focus is on anticipated ER and WM activities. A limited amount of historical information is included to provide the reader a reference point. However, the intent of the document is not to report and analyze previous performance.

A Progress Tracking System is being developed so that cost performance measures currently used by DOE and contractor management on individual projects may be made available to the Congress and to the public.

32. For the purposes of public verification, the ER budget needs to contain more information on how it will be used. (M-23, W5-16, S2-8)

An Activity Data Sheet number is provided for each project discussed in the SSP. Appendix A provides funding information by program and within each program by Activity Data Sheet. Activity Data Sheets are available for public review at the Information Repositories listed in Table 3-1.

33. Appendix B of the Draft SSP starts out with the statement that the section will walk through an actual Activity Data Sheet (ADS). Not only is the ADS mentioned not available in the Appendix, but this is the last mention of the ADS. It does not walk you through an actual ADS as stated. (S2-52)

This information was originally included to assist the reader with interpretation of the Activity Data Sheets. However, because the Activity Data Sheets are not included in this document, it was determined that the information was of limited use to a reader of the SSP. Therefore, the information will be available at the Information Repositories, where it may be consulted in combination with review of the Activity Data Sheets. Appendix B now presents planned activities at Waste Area Groups, including planning relationships and physical relationships between Operable Units.

34. Appendix C contains no indication of funding for the following projects, identified by Sanitary Surveys conducted by the state in 1990 as being out of compliance with state regulations. In DOE-ID's reply to the surveys, it was stated that these projects would be funded in FY 1993:

- 1. TSF-2: pump to waste and sanitary well seal (GPP funded)**
- 2. EBR-1 well (GPP funded)**
- 3. ICPP Drinking Water Well: Corrective Activity?**

Have these projects been dropped? (S2-56)

Information on an individual project is not identified at the ADS level. Appendix C provides a crosswalk from the new ADS numbers to the former ADS numbers. The specific activities identified in the comment would not be listed individually but would fall under a larger grouping of activities in an ADS. In reference to the specific activities listed: TSF-2 pump to waste and sanitary well seal is being worked with a line-item construction project upgrading the sanitary sewer system at TAN; the EBR-1 well is not located as a project on any INEL records, nor is any well in existence at EBR-1; and the ICPP drinking water

well is being reviewed under the ICPP construction upgrade.

35. Beginning with the section on Regulatory Drivers (page 186 of the Draft FY-1993 SSP) to the end of the appendix, nothing appears to apply to an actual ADSs. The definition for Total Project Cost makes no sense. This section is a good idea, but it needs substantial work to make it apply to an actual ADS. (S2-53, S2-54)

The information on "Translating an Activity Data Sheet" was prepared to aid the reader of an ADS in understanding the jargon and programmatic information contained therein. The discrepancy in matching this outline to the draft ADSs provided to the state comes from changes in the format of these ADSs during finalization. Due to continuing format changes and the need for this appendix to be attached to an ADSs rather than the SSP, the information has been dropped out of the SSP and will be placed in the INEL Information Repositories with the ADSs.

36. The numbering system used in the FY-1993 SSP and Appendix C do not agree with the actual ADSs. This situation exists with all ADSs ending in "EG." This makes state tracking from the FY-1993 SSP to an ADS extremely difficult. (S2-55)

The version of ADSs that were provided to the state were an earlier version. Renumbering has since occurred to match DOE-HQ's Work Breakdown Structures to the ADSs.

37. Government funding should be directed away from weapons production and nuclear energy and toward alternative energy sources, such as solar power. Such alternative energy sources have potential to provide adequate energy needs without potential for damaging the environment. Is DOE researching innovative, non-nuclear sources of energy? (B-41, W9-2)

The determination of which programs should receive funding is a decision made by Congress and the President. The DOE is then responsible for implementing the will of Congress and the

President with respect to programs it is in charge of. If the public feels certain programs should be funded instead of others, they should express these concerns to Congress and the President.

At the INEL, DOE conducts energy research in a number of nonnuclear areas, most of which is done at the INEL Research Center (IRC) in Idaho Falls. The IRC is a multidisciplinary research center that conducts advanced research and development in selected areas of engineering and physical, earth, and life sciences. IRC scientists support programs at the INEL and conduct independent research and development for, and in cooperation with, a number of government agencies, private companies, universities, and non-for-profit organizations.

Energy research being conducted in nonnuclear areas includes: hydropower (technology development, engineering research and development, and technology transfer); geothermal energy conversion research (developing technology for generating electricity from low- and moderate-temperature geothermal resources); biotechnology (involves conducting fossil fuel research using microorganisms to provide more efficient and environmentally sound ways of using and recovering fossil fuels); and transportation programs (testing of electric vehicles and their battery systems).

In addition, INEL researchers are involved in geopressured-geothermal research, which is centered around three wells in the Gulf Coast region. These wells produce three forms of energy: natural gas, geothermal fluids, and hydraulic energy. At one site, researchers are testing a system that converts natural gas and thermal energy to electricity. At the other locations, researchers are working to understand the nature of these resources and their production potential. Feasibility studies are also being conducted to evaluate the use of these resources for heavy oil recovery, aquaculture, agriculture, and supercritical detoxification of pollutants.

38. The SSP includes only ER and WM activities, which represents 36 percent of the INEL's FY-1992 total operating budget. However, the ER and WM

program does not include all restoration and management activities at the site. Some facilities have environmental or waste concerns funded through other DOE secretarial programs. These concerns, along with the other projects that make up the INEL mission (i.e., advanced energy production and utilization and the new missions of the ICPP should be identified in the FY-1993 SSP. (S1-16, S2-7)

The SSP is a document that is prepared to fulfill DOE Orders for ER and WM planning. It is inherently restricted to covering only those projects that have direct relationships to ER and WM. All remediation efforts and wastes generated at the INEL under the jurisdiction of DOE-ID's office of ER and WM are covered in the SSP. Other programs that are part of INEL's broader mission are not a part of the scope of the SSP. Information about the broader aspects of INEL are contained in the INEL Institutional Plan.

Public Involvement Proposed Working Group

39. Proposed language in the Defense Authorization Act addresses site advisory boards. The working group as proposed in the Draft SSP will not achieve true public involvement. It is DOE dominated and requires greater accountability. To be effective, the working group should have a state and EPA presence, and DOE should not have control over it. The group must have distance from DOE to have credibility. Having DOE facilitate the working group is neither credible nor acceptable. (B-28, B-29, P-5, M-31, M-33, W3-3, W10-8, W11-6, S1-2)

Language in the final Defensive Authorization Act, as passed by Congress in late 1992, requires DOE to prepare a report by May 15, 1993 on the role and effectiveness of citizen advisory groups. The report is to include an assessment of: 1) the effectiveness of existing groups that advise the DOE; 2) the desirability of establishing new or replacement advisory groups with respect to the DOE; and 3) methods of improving public participation in DOE's ER and WM activities. The

Secretary of Energy is to solicit comments and recommendations from the existing advisory groups, the general public, environmental organizations, and appropriate state officials in which DOE facilities are located. The Secretary is to include such comments and recommendations in the report.

DOE-ID is currently working toward developing a citizen advisory board. The working group proposed in the Draft SSP was the first effort in this direction. Because DOE received many different comments on how this group should be convened and how it should function, it is reexamining its proposal along with the models provided by commentors, other DOE facilities, and the Federal Facility ER Dialogue Committee (Keystone Dialogue Committee) that has been working on developing a model for such advisory boards. DOE will continue to develop a process for an advisory group and will involve the public in developing a revised proposal.

40. What power will the working group have? How often will the working group meet? What is its nature? How many people will comprise the working group? Who will choose the facilitator? (B-31, B-33, B-34)

As stated in the response above, the public will be involved in reexamining the proposal for a working group. Detailed answers to questions will be resolved through public involvement. At the moment, how these questions will be resolved has not been determined. Public involvement opportunities in deciding the nature and scope of the group will be announced through notification of the INEL Community Relations mailing list. To get on the mailing list call (208) 526-6864 or write the Community Relations Plan Coordinator at P.O. Box 2047, Idaho Falls, Idaho, 83403-2047.

41. It looks like an advisory group in this case provides input to DOE, DOE says "we'll take this into account" and that's the end of it. (B-32)

The purpose of creating an advisory board is to provide an avenue for greater public participation in DOE's decisions. By creating an advisory board, DOE-ID is not giving up its decision-making authority. Rather, it is strengthening that authority

by making decisions that are more acceptable to the public because they include public concerns as expressed by the advisory board.

42. The Snake River Alliance, Military Production Network, and other groups have their own alternatives for a working group [including guidelines for resources, membership, and group rights and responsibilities]. The League of Women Voters in Moscow, for example, supports a citizen advisory board as described in the "Elements of Meaningful Citizen Participation" document, while the Snake River Alliance supports a citizens advisory board to regulate and verify DOE-ID's plans for future site uses and long-term cleanup goals. The Military Production Network's model would require significant funding and a broad base of membership. The expectation that working group members volunteer their time and personal expenses without financial reimbursement is unreasonable. The working group must have funding to maintain commitment and quality of input. An additional request was that DOE-ID provide funding to the state for the creation of the working group because the working group would need data from more than one source and having it on the state level would allow for additional political input and greater impartiality. DOE-ID should not have final say on the working group membership, and the state should have authority to ensure neutrality. (P-5, M-32, M-34, M-35, W2-13, W3-4, W3-5, W5-9, W5-10, W10-8, W11-6, S1-2)

As stated in the previous response, the purpose of creating an advisory board is to provide an avenue for greater public participation in DOE's decisions. By creating an advisory board, DOE-ID is seeking to make better decisions by including public concerns as expressed by the advisory board. DOE-ID is re-examining its concept of a working group to ensure that such a group is acceptable to the public. With state, Tribal, and public acceptance, the incorporation of an advisory board's advice will provide added credibility to DOE-ID's decisions. The concerns about the

independence of the board and the need for the group to have resources to function must be addressed.

A national committee representing DOE, EPA, Department of Defense (DOD), and numerous national environmental and citizen groups such as the National Resources Defense Council and Military Production Network has been working on developing a model for creating site-specific advisory boards for federal facilities. The group, commonly referred to as the Keystone Dialogue Committee, has been addressing many of the same questions about independence, funding, and authority of advisory boards for federal facilities. DOE-ID intends to use this independent group's model as a framework for developing an effective advisory board for the INEL. The Keystone Committee's interim report was issued in December 1992. DOE-ID must also consider the legal stipulations of the Federal Advisory Committee Act, which dictates how federally funded advisory groups can operate. DOE-ID will be holding public involvement activities to address the resolution of concerns about the advisory board in an open forum.

43. The concept of a working group was given support. (M-35, W2-4)

DOE-ID believes responding to citizen requests by creating an advisory board should increase the public's level of involvement in DOE-ID decisions and improve the quality of DOE-ID's decisions and products in one step.

Other Public Participation Issues

44. The public meetings need to use both a court reporter and a flip chart to create a public record of the meetings and allow the public to review what was said in other cities. The informal round table discussion format was used without giving sufficient notice to the public. In the future, clarify the particular format that will be used so that the public can come prepared for participating in that format. (M-10, M-11, W6-1)

DOE-ID apologizes if the format of the public meetings on the Draft SSP was not clear. In the

future, premeeting publicity will clearly state whether the format of the meeting is informal or whether formal testimony will be taken and a court reporter present so the public can make appropriate preparations.

45. Informal public workshops (as opposed to formal public meetings) are a good way to encourage the dialogue between DOE and the public, and are actually preferred by the public. Round table discussions are much more useful than formal presentations with overheads. However, since attendance at these workshops to date has been low, DOE should continue to explore other ways of interacting with the public. DOE should also retain all avenues for formal submission of oral and written public comments on documents and issues. (S1-3, M-52)

DOE-ID found the meeting format used on the Draft SSP to be more effective than other types of meeting formats followed in the past. Round table discussions provide more opportunities for two-way exchange than panel-type discussions with formal presentations. Among other options being pursued by DOE-ID to increase public participation are a citizen's advisory board, comprised of stakeholders from around the state, agency representatives, and members of Indian Nations. DOE-ID strives to provide many different vehicles for comment submission, including a combination of flip charts, court reporters, tape recorders, and comment forms available at every public meeting.

46. Sustaining citizen involvement in complicated issues such as cleanup is difficult, yet the decisions made by DOE today will affect Idahoans for years to come. Nevertheless, DOE often makes these decisions operating on the premise "the less citizen input, the quicker." DOE needs to develop a new strategy for cleanup, one that reshapes the flow of information so problems come to light sooner rather than later. The driver for cleanup should be the need to protect Idaho's environment and its citizens (as opposed to internal bureaucracy). An

honest commitment to accountability from the DOE, EPA, and state of Idaho could make cleanup run more smoothly. Input from citizens should be encouraged and responded to, not heard and ignored. Full and voluntary disclosure of the environmental and health hazards at INEL is a prerequisite for any responsible cleanup effort. (W2-2, W2-3, W2-5, W2-6)

DOE certainly agrees with the comment that “sustaining citizen involvement in complicated issues such as cleanup is difficult.” The perception that DOE operates on the principle of “the less citizen input, the quicker,” however, is false. Also, the public may have unrealistic expectations of the decision-making authorities of the agencies. In particular, people are frequently confused by the division of authority among agencies, in this case the INEL, state of Idaho, and EPA.

In structuring its public involvement opportunities DOE seriously believes in its obligations to the public. That is, that the entire public must be informed of the consequences of a proposed action (especially in regard to cleanup) so that citizens can choose whether or not to participate; that highly visible ways of participating must be made available so that people know how to participate if they want to; that all interested publics must be represented among participants; and that equal access to information and to decision makers must be provided.

47. If issues are off-topic and cannot be addressed in various cleanup meetings or in the SSP, where can they be addressed? (M-12)

The INEL Public Affairs Office is always available to answer any questions relating to the INEL. A representative from Public Affairs is available at every INEL public meeting. They can be reached by phone at (208) 526-1317. The INEL Public Affairs Office also staffs outreach offices in Pocatello, Twin Falls, and Boise to answer the public's questions and concerns regarding the INEL.

48. Letters to the Editor and cartoons should be used in the INEL Reporter. (P-23)

The INEL Reporter, until recently, had a section similar to Letters to the Editor called “Q&A” (short for “Questions and Answers.”) This regular column section of the newsletter solicited comments and/or questions from the public, with the promise that the question or comment would be answered. “Q & A” was discontinued due to lack of submissions from the public. A recent edition of the INEL Reporter requested public input on what subjects should be addressed in future articles. Each issue of the INEL Reporter invites citizens to contact the INEL Community Relations Plan Coordinator or the INEL Outreach Offices in Pocatello, Twin Falls, and Boise to receive personal attention on any concern or question.

The INEL Reporter is a newsletter designed to inform and update the public on issues related to environmental restoration. Where possible, illustrations and photos will be used to help convey the information in the articles.

49. There is more interest by the public in INEL activities than is reflected by meeting attendance. Pocatello's impressions of INEL are hindered by lack of communication. Idaho State University and the Chamber of Commerce should be used as resources to facilitate greater public involvement. Perhaps food could be served at public meetings to improve attendance. (P-20, P-21, P-22)

DOE-ID has outreach offices in Pocatello, Twin Falls, and Boise. These offices are charged with seeking greater involvement of community leaders, such as including representatives from local universities and chambers of commerce. They are also responsible for offering personal attention, answering questions, and providing information to individual citizens.

This comment will be shared with the outreach offices. DOE-ID is pursuing other ways to promote larger attendance at its public meetings including radio advertisements and talk show appearances, newspaper advertisements, and announcements through its mailing list. DOE-ID would also like to network with organizations and

groups interested in notifying their respective members about DOE activities at the INEL through their own newsletter, notices, and meetings.

50. Is this process of having public meetings an attempt to get the public to consider nuclear energy and development positively and change public attitudes? (P-15)

The objective of the SSP and its attendant public involvement efforts are to:

- (a) Inform the public about current plans for ER and WM at the INEL;
- (b) Ensure that public concerns and interests are reflected in the SSP and in DOE planning;
- (c) Provide flexibility so modifications can be made to DOE plans in response to changing concerns;
- (d) Ensure that DOE-ID and INEL contractors are given feedback regarding public interest in and concerns about the DOE plans.

The purpose of conducting public involvement activities such as public meetings is to provide an avenue for greater public participation in DOE's decision-making process. DOE-ID is seeking to make decisions that reflect citizen and community values. Public meetings try to establish two-way communication through which mutual understanding of issues and concerns can be encouraged.

51. The nation has a problem. The INEL needs to take leadership in changing attitudes about nuclear energy. What is the news media's role? More advertisements and publicity are needed. (P-16, P-18)

As a government agency, DOE cannot use taxpayer money to purchase advertisements that promote a position. If nuclear energy is to be promoted, the effort must come from citizen and private industry advocates. DOE-ID provides press releases and purchases advertisements to provide public notice of comment periods, decisions, and availability of documents regarding waste cleanup activities.

52. Public meetings do serve to provide information to people. Good information can change attitudes. Let people know their opinions matter. (P-17, P-19)

The most influential policy DOE-ID can adopt for gaining credibility and public acceptance of its decisions is to provide full disclosure of ER and WM concerns and seek active public participation in its decision making. DOE wants to provide accurate information and provide opportunities that make it convenient for the public to get involved and communicate community values.

53. Public objections hinder DOE's cleanup progress. (TF-12)

While adversarial relationships with the public can hinder progress, the inclusion of the public early in the decision-making process can result in both improved decisions as well as decisions that are more acceptable to the public because public input was sought early. Cleanup activities are performed to protect public and worker health and the environment, and is paid for by the public. Public involvement is necessary for cleanup to progress.

Objections can result from incomplete information. DOE-ID is seeking a more cooperative relationship with the public and will attempt to answer objections with appropriate changes in decisions or reasons why objections could not be addressed.

54. DOE needs to include lead time for public involvement when planning their activities. (M-8)

DOE-ID and other agencies involved in cleanup make every effort to provide adequate notice to the public. When there has not been sufficient notice, public comment period extensions usually result. DOE agrees with this comment and is updating the Community Relations Plan (CRP) to address this suggestion and other comments regarding public involvement.

55. Why is the comment period so short? A 45- or 60-day public comment period would be better to allow the public sufficient time to review the SSP, prepare oral comments prior to public meetings, and complete more detailed written comments for submission after the meetings. Formal requests were made to

extend the comment period. (B-30, W3-1, W6-2, S1-6)

In response to requests to extend the public comment period on the FY-1993 SSP, DOE extended the period an additional 30 days to October 5, 1992. The extension resulted in a 60-day comment period. A 30-day comment period accompanies the release of the final SSP.

56. The SSP's reference to and explanation of the DOE Public Participation Plan is insufficient, with many questions left unanswered. For example, how is the Plan being developed, when will it be completed and implemented, and how does it relate to the INEL Community Relations Plan? Is the PPP solely a DOE-ID project or is an objective third party involved? Has DOE solicited public input on the Plan? (S1-4)

The ER and WM Public Participation Plan (PPP) is an evolving document that is intended to show how DOE-ID gets information to and from the public. The PPP is intended to be a major step toward meeting the ER and WM goal of creating an open and accessible decision-making process that results in decisions that are technically and economically feasible, environmentally sound, health and safety conscious, address public values and concerns, and can be implemented. The CRP fulfills the legal requirements of the Comprehensive Environmental Restoration, Compensation and Liability Act (CERCLA) for the ER program. The PPP has not yet been reviewed by anyone outside DOE, but it will be released for review and comment in the near future.

57. A public involvement plan is not required by the regulations, according to the chart in Chapter 3. This conflicts with the statements elsewhere in the chapter that one is required. (S2-13)

The statement in question was incorrect in the Draft SSP, and has been corrected. A public involvement plan is recommended but not required for RCRA-permitting activities. Public involvement activities for RCRA permitting are handled by the Idaho Department of Health and Welfare as part of the permitting process.

58. The "opportunities to get involved in planning and decision-making activities related to environmental restoration and waste management" are hardly responsive to the public's request. The SSP is held out as one of the major vehicles for public involvement. DOE must not consider the comments on this plan, or the lack of comments on the specific proposals which should be covered by the plan, as the "informed consent" it seeks to promote. Without the funding levels, one cannot evaluate the technical feasibility of, or the priority, placed on a project. The public understands why ER is required. DOE must focus on why a particular action is being selected. (S2-58)

DOE recognizes that it is hardly fair or even realistic to ask the public for its involvement on a project without providing that public with all the information necessary to form an accurate opinion. Public involvement, by definition, is a process (or set of processes) by which interested and affected individuals, organizations, agencies, and government entities are consulted and included in the decision-making process of a government agency or corporate entity. The difference between public involvement and public information may be confusing. The purpose of public information is to inform the public, while the purpose of public involvement is both to inform the public and to solicit responses regarding community needs, values, and evaluation of proposed solutions.

As noted in the state's comment (above), the public must receive information from the agency involved because people cannot evaluate alternatives unless they have been adequately informed of those alternatives and the consequences of each. Public information is a central element of any public involvement program presented by the DOE. The funding information absent from the Draft SSP is now available in the final version. All three agencies—DOE, the EPA, and the state of Idaho—try to explain how final decisions were made after consideration of public comments in the Record of Decision documentation which accompanies every ER action.

59. Moving INEL documents from the Moscow public library to the University of Idaho Library has resulted in the documents disappearing into a black hole. It seems government documents are not directly accessible by the public. They can't be retrieved by a document number or name until they are catalogued, which will not be completely done for several months. (W7-5)

Moving INEL documents from the Moscow Public Library to the University of Idaho (U of I) Library was done in response to suggestions from interested citizens. One distinct advantage of the U of I Library is that it is open more hours than the Moscow Public Library. Recent frustrations experienced by the public in accessing documents may have been due to remodeling that occurred at the library. During construction on the new part of the building, the INEL documents were temporarily housed in a "reserved" area, making the documents less convenient. The INEL documents have been moved to a location in the Reference area on the third floor of the library. DOE continues to coordinate with the libraries to find ways of providing greater public access to information.

Hours for the U of I Library are Monday-Thursday, 8 a.m. to 10 p.m.; Friday, 8 a.m. to 5 p.m.; Saturday, 11 a.m. to 4 p.m.; and Sunday, 6:30-10 p.m. The Reference Librarian on the third floor is available to help access INEL documents during these hours. We recommend you call ahead to verify open hours, as they change seasonally.

Roadmapping

60. You state in the SSP that the INEL is the lead site in Human Resource Loading for roadmaps. What is Human Resource Loading, and is the INEL the only DOE site doing it? (B-3)

As part of the roadmap process, efforts are being made to identify personnel resource requirements in order to predict future resource needs. INEL is one of the lead sites, along with Fernald, Rocky Flats, and Savannah River, in incorporating this type of information into the roadmap process.

The process involves adding job classification breakdowns into the logic of the roadmapping process so that future job and training needs are identified in advance. This will help DOE anticipate its needs for properly trained individuals to ensure such resources are available to perform the work that is anticipated in the future.

61. Roadmapping sounds like a good idea. What is Roadmapping's history, and how is the public involved in the process? In Figure 1-3 DOE implies there will be opportunity for public and/or outside agency review and comment on the Roadmapping documents. DOE must follow through on its promise to make Roadmapping documentation available for review and comment, including getting the documents to the public early in the planning process to allow enough time for review. (B-2, S1-5)

The roadmapping process was initiated in FY 1992 to develop a strategic method for identifying issues that may affect DOE's ability to accomplish its mission and work toward resolution of these issues. To date the roadmapping process has only been used as an internal management tool but it has been expanded to be used as a focal point for future planning. The roadmap process outlined in the SSP explains how and why roadmaps are used. It is anticipated that as the use of the roadmapping expands, public involvement opportunities in the process will be created. The decision of how to include the public will be made at DOE-HQ.

62. The Roadmapping program, as explained in the SSP, appears to be overkill in planning, particularly concerning ER since action timetables have previously been established by the FFA/CO. (W10-6)

The discussion of Roadmapping in the Draft SSP was not entirely clear on the relationship of Roadmapping to planning. Roadmapping is not long-range planning, but an analysis of existing long-range plans and the identification of issues which may impede success in accomplishing long-range plans. For this reason, it is a useful tool to ensure that potential barriers to successful completion of FFA/CO milestones are identified

early so they can be addressed before they impact FFA/CO compliance.

Environmental Restoration

63. What are Track 1 versus Track 2 Operable Units? (M-40, MB-4)

In generic terms, an OU is an area of contamination. During negotiations on the FFA/CO, OUs were identified as a way to organize cleanup activities at the INEL. In determining priorities and milestones for cleanup projects, the amount of existing data on each OU was considered. If a substantial amount of data existed for an OU and that data indicated little or no problem, then that OU usually became a Track 1 (data study). On the other hand, if very little data existed for an OU, then data collection was assumed to be necessary and the OU was designated a Track 2. If enough data existed on an OU to determine that some type of action should be considered in the near future, that OU was designated for an Interim Action or a Remedial Investigation/ Feasibility Study. The "Remedial Investigations and Actions" section of Chapter 5, "Environmental Restoration," explains the difference between Track 1 and Track 2 studies in greater detail.

64. Definitions and classifications of ER sites should be negotiated with the public to best serve the public's needs. How are the Operable Units (OUs) organized? There has been frustration over the site's separation into OUs, a classification system that divides inter-related sites into separate areas. For example, how will the Snake River Plain Aquifer be addressed? (M-54, M-55, MB-1, MB-2, MB-4, W3-2, W5-17)

The identification of potential contamination sites at the INEL was first done under the Consent Order and Compliance Agreement between DOE-ID, the U.S. Geological Survey, and the state of Idaho, listed than three hundred sites as having the potential to be contaminated. When the FFA/CO was negotiated, the agencies agreed to divide the sites identified in the Consent Order and Compliance Agreement into Waste Area Groups (WAGs) and OUs. Before being signed, the action plan containing a description of each of these

FFA/CO groupings was available for public comment on this grouping and other aspects of the plan. Appendix B in the final SSP is an attempt to respond to citizen input by presenting the WAG and OU FY-1993 plans and activities in a simple table.

Nine WAGs link contaminated sites geographically within the various facility areas at the INEL and include any potential contamination of the aquifer beneath the associated facility. The tenth WAG covers areas outside facility boundaries and includes overall contamination in the Snake River Plain Aquifer. OUs within each WAG consist of one or several potential release sites that are grouped together because they are geographically related or have similar types of contamination that can be addressed in a single investigation. Division of WAGs into OUs has allowed the three agencies to prioritize sites so that those that pose a greater risk to human health and the environment can be addressed through interim actions while other sites are investigated. Each WAG also has a comprehensive OU that is designated to provide a review of all actions taken within a WAG. The comprehensive OU evaluation will ensure that all interrelationships of OUs and cumulative impacts within a WAG are examined. The comprehensive OU for WAG 10 will be the final investigation of the entire INEL, including all remedial actions undertaken, to ensure there is no remaining unacceptable risk.

65. Biological considerations seem to be absent from the plan. What is the biological history of INEL? "Environmental Restoration" implies there is a particular state you are attempting to restore the environment to. Do you know what this state is? (M-16)

The biological considerations of restoring the environment are one part of the cleanup process being undertaken at INEL. When contaminated areas at the INEL are investigated, an ecological risk assessment is conducted to determine if there are unacceptable risks to the environment. The results of this ecological risk assessment are considered during the process of determining what remedial actions are appropriate. The issue of what level of restoration will occur (i.e., how clean is clean) is currently determined in consultation with the EPA and state of Idaho on a

project-by-project basis. To date, only minor efforts have been made to identify the ultimate environmental state of the entire INEL.

66. The Environmental Restoration chapter (Chapter 5) of the Draft SSP lacks specific information. Descriptions of many OUs identify a site generically by stating that the site consists of, for example, "four dry wells," but provides no relevant information as to why the site is being investigated. The whole ER chapter lacks substance about what activities are being planned. (M-29)

Chapter 5, "Environmental Restoration," was reviewed and revised to provide this additional information. Changes were also made in response to requests made by the Moscow League of Women Voters during a telephone briefing, including the addition of Appendix B. In many cases, sites were identified because they had the potential to be contaminated but are not thought to be sources of significant contamination. In these cases, the basic generic description may be all that is known until further investigation provides more data. These sites are usually classified as Track 1 or Track 2 investigations.

67. The Environmental Restoration Chapter should contain all essential relevant plan details for each OU. Each OU should have a page dedicated to it with the following information:

- (a) A physical description of the problem and where it is located.
- (b) A statement of what has been accomplished to date. If nothing, say so.
- (c) A schedule of activities to be performed with milestones indicated. A bar graph would be useful. Also a statement of how and what activities will be carried out.
- (d) An estimated amount of dollars to be spent for each activity, when it is to be spent, and a breakdown of dollars spent to date. It is acceptable to state that these are estimates and subject to

government funding approval before they can be carried out.

(e) Indicate impacts on the OUs from the cleanup of other OUs.

(f) Reference listing of all technical documents.

(g) A listing of all accounting numbers (general ledger, work order, etc) for which dollar costs are recorded as part of ER and/or WM.

(h) A statement of how priorities were chosen and selected for cleanup of the OU.

(i) A listing of government laws that impact the cleanup of the OU. (MB-5, MB-6, W3-2, W5-17, W7-4, W10-10)

While the SSP contains some of this information, much of what is requested is at a level of detail that goes beyond what the SSP is intended for. Most of the information above can be found in the INEL Information Repositories organized by WAG or in the ADSs that are referenced to aid those who wish to look into DOE-ID planning at that level of detail.

The ER program at DOE-ID will provide this level of detail during its semi-annual briefings on the status of the ER activities at the INEL. Information will be sent to individuals on mailing lists and advertisements will be run in newspapers statewide to give advance notice of this briefing.

68. Arrange the OUs by cleanup priority or in chronological order. (M-36, W7-4)

The bar chart figures in Chapter 5, "Environmental Restoration," for each WAG provide a visual depiction of the chronological order of each OU's investigation. This information has been summarized in a new table that places the milestones in chronological order. Additionally, a table of ER activities to be performed in FY 1993 is provided as Appendix B.

69. Use the names of the OUs as well as their track numbers. (M-37)

Many OUs are groupings of several different types of wastes or locations and do not have specific

names. Only OUs in WAG 7 have names assigned by the FFA/CO. Where possible, the OU names will reflect the types of contamination known to be present. The track number of each OU can be found in both the text and Appendix A.

70. What is going to be done with the pre-1970 transuranic (TRU) waste which is currently buried on-site? What is being done to prevent/monitor percolation of buried TRU waste into the aquifer? Will the buried TRU waste ultimately be removed? Is buried TRU waste considered a health hazard? How fast, if at all, does it migrate in soil? What is the status of buried waste projects? Will Pit 9 serve as a treatment example, to show us what works in the way of cleanup technologies? What new technologies are being pursued in the next year? (B-5, B-8, TF-13, W4-4)

Under the current waste acceptance criteria for the Waste Isolation Pilot Plant (WIPP) site, pre-1970 TRU waste may not be accepted for disposal and must therefore await the development of a new repository (see response to comment no. 126). Environmental monitoring occurs at the Radioactive Waste Management Complex (RWMC) where INEL's wastes are buried. Greater detail regarding environmental monitoring is available in Chapter 6, "Waste Management," and Appendix D of the final SSP.

The RWMC is considered WAG 7 for the purpose of ER. Volatile organic compounds (VOCs) and radionuclides are present in the subsurface below the RWMC and are being investigated as part of WAG 7 to determine if migration is occurring and if so, how fast. One of the primary causes of contaminant migration at the RWMC was flooding that occurred in 1962, 1968, and 1984 during spring thaws. Flooding has since been controlled by the use of dikes and detention basins that keep water from reaching the RWMC. This measure should prevent further migration of contaminants. The results of the WAG 7 remedial investigations will determine what remedial actions will be appropriate. Remedial activities and investigations for buried waste are discussed as part of WAG 7 in Chapter 5, "Environmental Restoration."

The Pit 9 demonstration is intended to provide an indication of what processes already exist in the private sector to address the problem of buried waste. New technologies for remediating buried waste in a manner that is faster, safer, and cheaper are being explored through DOE-ID's Buried Waste Integrated Demonstration program which is discussed in detail in Chapter 8, "Technology Development."

71. How many more employment opportunities in ER will be available next year? (P-14)

The actual number of new employment opportunities is difficult to predict. It is dependent on the staffing requirements of ER, availability of staff from other decreasing programs, and the number of subcontracts required. It is anticipated there will be a stable number of jobs in ER with a slight increase in employment in 1993, due to subcontractors starting several INEL cleanup projects. Subcontractors have signed the site stability agreement and have agreed to hire locally where possible. Employment levels are not expected to increase in 1993.

72. Environmental cleanup should begin as soon as possible, and should weigh actual health and environmental threat levels. Imminent threats should be dealt with first; then, to prevent contamination from spreading mobile waste should be addressed. "Quick fixes" should only be used if they reduce risk without confounding remediation. (W2-12, W8-2)

ER efforts have already begun and use this exact strategy. Sites that pose the greatest threat to human health and the environment are being worked on first along with those sites that are well understood and have problems that can be handled. Sites that require more investigation and study are being controlled to minimize potential human or environmental exposures. It should be emphasized that no sites pose immediate risks to human health. The process of remediating the entire INEL will take decades; however, because the INEL has been divided into separate WAGs and OUs, it will be possible to complete remedial actions at some areas sooner than others. Care is taken to ensure that all interim actions taken to

address source areas do not complicate final remediation.

73. What does decontamination and decommissioning (D&D) mean? Will it result in more waste being received at the INEL, and how will the public be involved in the cleanup of waste produced during D&D activities? (B-4, MB-9, W3-2)

The D&D program is an internal DOE program initiated in the 1970s to deal with facilities that have completed their mission and require various levels of cleanup. The cleanup could range from simply scrubbing and cleaning a facility to ensure radioactive contamination is removed to full demolition and removal of the facility. D&D activities do produce waste, but DOE-ID does not receive any off-site waste that is a result of D&D activities. There is no public involvement in the D&D program per se, but the storage and disposal of any D&D wastes at INEL facilities will be evaluated under the comprehensive RI/FS study for each WAG. These CERCLA activities will all have a public involvement component. Chapter 5, "Environmental Restoration," describes the D&D program in greater detail.

74. A technical briefing is needed to review each WAG and OU in terms of what is planned in the coming year. (M-5, W3-2)

In response to this comment, a technical briefing was held on September 22, 1992 between DOE-ID ER and WM personnel and residents of the Moscow community. Additional input received from citizens at this briefing is included in this section, coded as "MB-#."

75. On p. 87 of the Draft SSP, the 1000-foot distance from the Radioactive Waste Management Complex (RWMC) seems to be an arbitrary distance. The area of concern should extend to the edge of the (240 foot?) interbed. (M-7)

In response to this comment, the description of OU 7-07 now states: "Operable Unit 7-07 is described as the non-volatile organic compound contamination within the unsaturated subsurface region beneath the RWMC."

76. In OU 7-06 a description is given of subsurface water, while the text mentions groundwater. Section 7-07 definition implies that groundwater is included in the vadose zone. (M-6, M-53, W4-1, W4-2)

OU 7-06 is the study of the groundwater pathway. The statement in the Draft SSP read that this OU includes "all groundwater beneath the Radioactive Waste Management Complex (RWMC) and vicinity, including all water in the subsurface water." The problem pointed out by the commenter is that subsurface water includes all water beneath the surface whether it is saturated or unsaturated. The term groundwater, however, strictly applies to subsurface water that is saturated. In response to this comment, the description for OU 7-06 now reads "OU 7-06 is composed of all groundwater beneath the RWMC and vicinity, including all water in the subsurface fracture zones, intermediate sedimentary beds, perched water, and the Snake River Plain Aquifer." The reason the groundwater pathway investigation includes all subsurface water is that subsurface water may potentially impact groundwater.

77. Are any operational pits included in OU 7-03 or OU 7-14? How does DOE intend to separate low-level waste (LLW) disposed of at the RWMC from that investigated or remediated as part of ER efforts? DOE needs to differentiate areas that are dedicated to disposal versus those areas that will be investigated or remediated under WAG 7. (MB-7, MB-8)

No operational pits are included in OU 7-03 or OU 7-14 at this time. Currently, DOE-ID does differentiate between operational pits (regulated by the Atomic Energy Act) and those being remediated under CERCLA. There are no plans to remediate the areas of the Subsurface Disposal Area currently being used to dispose of low-level waste. However, the entire RWMC will be examined at a later date to ensure there is no threat to human health or the environment.

Waste Management General

78. It would be helpful to identify the roadblocks on all waste stream charts and include necessary legend items. (S2-28)

This comment has been incorporated into the final version, with the roadblock for each waste stream identified in the legend.

79. On page 106, the Draft SSP makes reference to "HEPA filter changeout . . . approximately once a year when the incinerator is in full operation." What incinerator and where is it located? (S2-23)

The incinerator being referenced is the Waste Experimental Reduction Facility (WERF) incinerator. This facility is located in the Power Burst Facility area, 3 miles east of the Central Facilities Area. Text in the final SSP has been revised to make this clear.

80. The public is dealing with an incomplete picture. We need an overall WM plan. (TF-9)

Chapter 6, "Waste Management," provides a great deal of detail on how each waste stream at the INEL is treated, stored, and/or disposed of. It provides a great deal of detail on WM plans. Additionally, the Environmental Restoration and Waste Management EIS will provide details on WM plans. DOE is working with the INEL Outreach Offices to provide information on WM operations that give a more complete picture of activities at the INEL.

81. Several inconsistencies exist in the Draft FY-1993 SSP major milestones for Municipal Solid Waste Programs at INEL when compared with milestones listed in the FY-1992 SSP. The milestones in the FY-1992 SSP were as follows:

- 1. Complete construction of Solid Waste Transfer Station, fourth quarter FY 1992.**
- 2. Complete development of Recycling Center, first quarter**

FY 1995.

- 3. Implement Advanced Treatment and Disposal Methods, fourth quarter FY 1996.**

Milestones for Municipal Solid Waste Programs at INEL in the FY-1993 SSP were:

- 1. Complete construction of Solid Waste Transfer Station, fourth quarter FY 1996. Why the delay from the FY-1992 SSP?**
- 2. Complete construction of Waste Handling Facility, fourth quarter FY 1996. Where is this project in the FY-1993 SSP?**
- 3. What is the status of the Recycling Center and Advanced Treatment and Disposal Methods Projects mentioned in the FY-1992 SSP? (S2-29)**

Upon further investigation of the INEL's municipal waste, DOE-ID has determined that the waste generated can be more economically placed in the existing, on-site industrial waste landfill. This complies with regulations governing the disposal of municipal waste. The need for the transfer station has been eliminated. The necessity of a Waste Handling Facility has been eliminated as well. These milestones have been removed from the document.

The Recycling Center and Advanced Treatment and Disposal Methods Projects are in progress, and the milestones mentioned still stand. The milestones are now listed under nonhazardous waste.

For inconsistencies such as the ones noted in this comment, the final SSP includes graphic boxes that call the reader's attention to the explanations for changes. The placement of these change boxes is in response to comments collected during public meetings that voiced frustration over the inability to track prior planning to current documents. Change boxes have been placed throughout the final SSP to better identify and explain changes in either DOE-ID planning or significant changes from information presented in the Draft SSP.

82. The Radioactive Scrap and Waste Facility (RSWF) is located in very corrosive soils, and containers have corroded in the past. There should be a detailed discussion in the final SSP about how ANL-W plans to handle this issue. (S2-36)

A major provision of DOE/ID-10131, the RSWF Part B Permit Application, is the replacement of all existing RSWF liners with new, cathodically protected liners and the transfer of all mixed waste and other material stored at the RSWF from the existing liners to new, cathodically protected liners.

This step is being taken because the soil at the RSWF ranges from mildly to moderately corrosive, as defined by the U.S. Bureau of Standards, and some of the liners retrieved to date have been compromised by corrosion. However, no release of radioactive or hazardous material has occurred.

83. The section in the Draft SSP on milestones for LLW states that during the fourth quarter of FY 1994, ANL-W plans to "translocate" scrap. To where? How? Why? (S2-39)

All scrap stored at the RSWF will be moved into new, cathodically protected liners (within the RSWF) using the HFEF 5 cask. The scrap will be moved because it is presently stored in carbon steel liners that are unprotected against the corrosive soil at the RSWF. The schedule is based on risk to the environment. Therefore, radioactive waste and mixed waste will be moved before the fourth quarter of FY 1994. When the waste has been moved, the movement of the scrap will begin.

84. In the FY-1992 SSP, a Process Verification Facility is mentioned. In the FY-1993 SSP, in place of that facility, a Multi-Function Pilot Plant is mentioned. What are these projects? (S2-46)

Before the change in mission for the ICPP, the Process Verification Facility was designated to handle verification of the new calcine-glass/ceramic process. Since the transition to the new mission, this activity is to take place in the new Multifunction Pilot Plant Facility which will serve the needs of the glass-ceramic research as well as the need for facilities in which other

research and development work can be conducted. Combining pilot plant facilities will be more cost effective than building separate facilities. In addition, work is underway to identify existing facilities that are no longer used for fuel processing that can be converted for use in research and development.

85. Is the Defense Waste Management Plan mentioned on p. 166 in the Draft SSP the same as the Spent Fuel and Waste Management Technology Development Plan? (S2-49)

No. The Defense Waste Management Plan is a Defense Programs (DP) document (DP-0015, June of 1983). The Spent Fuel and Waste Management Technology Development Plan is a DOE-ID document that was produced jointly by Westinghouse Idaho Nuclear Company and DOE-ID (latest issue was July 27, 1992). The reference in the final SSP has been changed to indicate this.

86. The Five-Year Plan seems to have little relationship to the Spent Fuel and Waste Management Technology Development Plan. Since the two plans address many of the same issues, they must be integrated. (W11-5)

The Spent Fuel and Waste Management Technology Development Plan is still in draft form. Next year, information in this plan will be integrated into the Five-Year Plan.

87. Is the INEL going to be involved in dismantling weapons? How will it affect WM? (M-14, W5-4)

It is not anticipated that weapons decommissioning activities will become part of INEL's mission in the near future.

88. Waste should stay in the state where it was generated. Idaho should not allow the continued shipments from off-site sources into Idaho, where it has the potential to contaminate Idaho soil and groundwater. (W2-8, W2-9)

The only waste that the INEL presently receives from off-site is TRU waste returned from Argonne National Laboratory-East in Chicago, Illinois to

ANL-W. This waste was originally generated at the INEL, shipped to ANL-E for testing, and returned to the INEL for storage.

89. What are the noncompliant mixed wastes affected by the May 8, 1992 Land Disposal Restriction expiration? Specific and detailed discussion is needed. (S2-25)

Specifically, the noncompliance mixed wastes fall into 13 categories: lead, heavy metal contaminated solids and liquids, TRU heavy metal contaminated materials, cadmium solids, low-level mixed waste sodium/potassium, ignitable liquids, high efficiency particulate air (HEPA) filters for both low-level and high-level waste, high-level mixed waste calcine, remote-handled tank sludge, alpha contaminated waste, and multiple uncharacterized waste streams.

90. All plans pertaining to hazardous waste at the INEL should include provisions for its continued disposal at off-site permitted facilities away from the Snake River Plain Aquifer. (S2-16)

Hazardous waste disposal takes place both off site and at a RCRA-permitted facility on site. DOE will continue to use the Waste Experimental Reduction Facility (WERF) to dispose of those wastes where it makes economical sense and can be done with protection of human health and the environment.

91. What can Idaho residents anticipate for waste management activities this year? (P-13)

Chapter 6, "Waste Management," has been revised to call out information on FY-1993 planned activities more clearly. Please refer to the individual waste streams within this chapter to identify specific planned activities.

92. Why can't details of waste stream sources (like NRF), including volumes of waste generated at each source, be included in the SSP? (B-12)

Table 6-1 identifies waste generation by contractor since 1991. Details regarding Navy spent fuel are restricted due to national security issues surrounding weapons-grade nuclear materials.

93. Are low-level wastes sealed and stabilized? Are wastes from nuclear power plants solidified into casks that cannot be penetrated? (B-22)

Before LLW is disposed of at the INEL, it must meet the waste acceptance criteria for the disposal pit that is currently in operation at the RWMC. DOE-ID requires waste to be suitably packaged and stabilized before it can be disposed of. In some cases waste is already in an acceptable form; in other cases, waste must be grouted or treated to stabilize it before disposal. The term cask is generally used to refer to a vessel for transporting waste. Shipping casks used for all waste operations at the site must meet Department of Transportation guidelines and are tested to ensure they meet high standards to prevent releases in the event of a transportation accident. Commercial nuclear power plants are responsible for their own LLW which generally goes to commercial LLW disposal sites.

94. The SSP needs to include what waste is at different facilities at the INEL. Also, the section on waste streams mentions that most waste generated at INEL is nonradioactive, solid, or hazardous waste. It also should be stated that the most voluminous waste streams are air emissions and liquid effluent, which are not discussed here. (B-42, S2-26)

The discussion of waste generation and inventory in Chapter 6, "Waste Management," provides a great deal of information about waste at the different INEL facilities. Table 6-1 indicates which wastes are generated at each of the various operating facilities at INEL. Table 6-2 describes the volume of waste generated and stored by each of the major INEL contractors. In addition, each waste stream discussion in Chapter 6, how the facilities' operations affect the waste stream is also discussed.

Although nonsolid emissions are, by definition, the most voluminous, the hazard posed by these releases is relatively insignificant and, therefore, not discussed in the SSP.

95. The SSP claims that "waste management operations at INEL are conducted to ensure activities are in compliance with applicable laws" are inaccurate. Continued use of unlined percolation ponds for radioactive process waste disposal, and continued use of high-level waste tanks which do not meet structural RCRA or seismic standards are two examples of illegal activities. (MB-3, W5-7, W5-13, W5-16)

The ICPP high-level waste tanks are currently being operated under a consent order with the state of Idaho. Due to the lack of an interior coating on the secondary containment, the waste tanks are not in compliance with RCRA. The consent order, which outlines milestones for achieving compliance with RCRA requirements, was signed by DOE and the state on April 3, 1992. The consent order requires WINCO, the operating contractor at the ICPP, to vacate five of the 11 waste tanks by 2009 and vacate the remaining six by 2015. WINCO is currently developing a compliance plan to replace the ICPP's high-level waste tanks. However, the liquid waste contained in the tanks may be converted to a granular solid and stored elsewhere before DOE is obligated to vacate the current tanks.

Under another consent order with the state of Idaho, as of January 1, 1993, WINCO no longer discharges water containing radioactive materials to the ICPP percolation pond. Water discharged to the pond is first treated at the Liquid Effluent Treatment and Disposal facility, which traps the trace quantities of radionuclides. Because of this treatment, water discharged to the pond is free of radioactive material.

The warm waste pond at the Test Reactor Area, another unlined pond, is scheduled to be replaced in 1993 by a lined evaporation pond. The use of the warm waste pond has always met the laws and regulations in effect during the period of use, including its use at the present time.

96. How is the subject of "below regulatory concern" waste addressed in the SSP? (W5-15)

"Below regulatory concern" is a term used by the Nuclear Regulatory Commission (NRC) for LLW that is generated in commercial settings (hospital waste, for example). The term is not applicable to the SSP because the DOE regulates its own waste disposal and NRC terminology and regulations do not apply to DOE LLW.

97. DOE's unwillingness to include the curie content of on-site waste is unacceptable. The radioactive curie concentration is the key to assessing the relative hazard/risk posed by listed wastes. (W5-18)

DOE does analyze and account for the total activity associated with waste on site. The risk posed from radioactive waste is driven by exposure potential. In the ER program, risk from exposure to radionuclides is assessed and remedial action can be warranted if risk from exposure is unacceptable.

98. WM activities are an integral part of INEL's mission and should continue so long as these activities are conducted in a safe and environmentally responsible manner. (W1-2)

The INEL has pledged to pursue its mission with the safety and health of its workers as its highest priority. Operations are conducted with protection of human health and the environment in mind.

99. How many more employment opportunities in WM will be available next year? In hiring changes, INEL's "Cold War veterans" should be a priority. The DOE must ensure rehiring preferences, health care support, and retraining for all line workers. (P-14, W2-11)

The actual number of new employment opportunities is difficult to predict. This is dependent upon the staffing requirements of WM and the level to which subcontracts are let. Whenever possible, staff from decreasing programs are hired for new positions created from ER and WM work. The number of jobs in WM at the site is not expected to increase in 1993.

Regardless of which firms win contracts to do work at the INEL, hiring preferences will generally be given to local personnel. With a sizeable pool of workers with the desired security clearances, safety training, and site knowledge necessary to do work at the INEL, southeastern Idaho should continue to be a valuable source of labor.

Waste Minimization

100. DOE's commitment to waste minimization in the SSP is suspect in light of continued operations of unnecessary programs and proposed spent fuel processing, which will increase the waste stream at the ICPP. (W5-19)

Waste minimization is of prime importance in all DOE operations. Fuels now in the DOE system must be disposed of in some manner when they reach the end of their useful lives. DOE is committed to finding the most appropriate method for preparing this fuel for permanent storage in a federal repository. Waste minimization, safety, and environmental stability are major factors in selection of the appropriate process.

101. For an INEL Waste Minimization Plan to fully benefit DOE and the citizens of Idaho, policies must apply to all INEL facilities including NRF. Wastes generated at NRF end up in a storage or disposal system that is subject to waste minimization reporting. There is little or no control over waste generation. (S2-21)

Although not under the cognizance of DOE-ID, NRF does have a Waste Minimization and Pollution Prevention Program. This program is designed to meet all the requirements of the RCRA and the Pollution Prevention Act, including the reporting requirements of Section 3002 of RCRA. Further discussion of NRF's relationship to the INEL as a waste generator can be found under the "Waste Generation and Inventory" section of Chapter 6, "Waste Management."

102. The "Specific Objectives" for the Waste Minimization Program are too general. The ADSs give specific examples, such as a solvent substitution

database and specific reduction targets for certain waste types. (S2-22)

The objectives listed in the Waste Minimization section are intended to be general in order to transcend the various waste stream requirements. Specific goals and accomplishments in the area of waste minimization and pollution prevention are listed, following the objectives, in the "Current Waste Minimization Activities" section of Chapter 6.

Waste Classification

103. Clarify the distinctions between hazardous waste, LLW, mixed waste, D&D activities, and on-site versus off-site generation of waste. Specifically, the description for LLW and the amounts of LLW and the treatment, disposal, and storage options for wastes between 10 and 100 Ci/g ("orphan wastes") should be identified. Are there any plans or supporting documents that include the receipt of off-site waste? Is DOE looking at on-site disposal rather than the current off-site disposal of high-level waste? (B-6, S1-20, S2-9)

A basic description of each waste type is included in Chapter 1, "Introduction to the Site-Specific Plan," and in Chapter 6, "Waste Management," a discussion of waste inventory and generation is provided. The only waste that is received from off-site is TRU waste that is generated by INEL and shipped to ANL-East in Chicago for testing and then returned to the INEL. As stated in the Draft SSP, the state is aware of this activity.

As outlined in Chapter 5, "Environmental Restoration," D&D efforts are for surplus facilities at the INEL that require various levels of cleanup. The cleanup could range from simply scrubbing and cleaning a facility to ensure radioactive contamination is removed to full demolition and removal of a facility. While D&D activities produce waste, DOE-ID does not receive any off-site waste that is a result of D&D activities. DOE does receive spent nuclear fuel from off-site. DOE is not considering the INEL for disposal of high-level waste.

104. There are questions surrounding the classification of spent fuels as not being wastes. These semantic questions lead to questions of DOE credibility, and problems with disposition of waste depending on classification. (M-49, W5-14)

DOE recognizes that debate arises over its definitions and classifications of materials. The majority of spent fuel material is considered a high-grade material that has the potential to be recycled to recover its resource value. No applicable statute, regulation, or order defines spent nuclear fuel as high-level waste. Please refer to the Atomic Energy Act of 1954 and the Nuclear Waste Policy Act of 1982, where these terms are separately and distinctly defined.

105. DOE-Idaho uses the term "special" fuels to describe part of the Special Nuclear Fuel inventory without specifying the origins of the fuels. This clarification should be made in the final plan. (S2-14)

Rather than identify all fuels existing at the ICPP in each document, it has been convenient to categorize fuels in the larger categories (e.g., Navy, graphite, and special). "Special nuclear fuels" are defined as "Fuels that are nongraphite or non-Navy fuels." This definition has evolved just recently, but is consistent with the definition given in other recently issued documents. The old definition was "Fuel for which there does not now exist either a processing flow sheet, or head-end processing facility." Since cessation of fuel reprocessing for recovery of unburned uranium, the definition has been changed to the one above.

The source of special fuels is varied. A few examples include: DOE-owned reactor fuels; research reactor fuels; university reactor fuels; fuels owned by DOE that were used in foreign reactors; breeder reactor blanket materials; and DOE and NRC test program reactor fuels.

106. Aren't there highly radioactive materials in LLW? It is not harmless. (B-26)

LLW is characterized not by the level of radioactive materials but by the short-lived nature of its

radioactive elements. Thus LLW can be highly radioactive. LLW with a strong radiation field is termed "remote-handled" waste and is handled differently than "contact-handled" waste. Remote-handled waste is disposed of in soil vaults instead of the open pits used for contact-handled LLW. LLW should not be viewed as harmless; however, after several decades of decay low-level waste becomes harmless. DOE takes great efforts to ensure that LLW disposal is done in a safe manner.

107. On page 13 of the Draft SSP, DOE defines LLW. How can LLW allow the presence of TRU radionuclides? Are there standards using the 10 and 100 nanonucleide levels? How were these determined? (M-44)

As a result of atmospheric weapons testing and natural bombardment of cosmic rays, there are TRU radionuclides present as background throughout the world. For this reason, it is not possible to say that no waste should have TRU radionuclides present. The question becomes how much TRU contamination is acceptable before the presence of those radionuclides dominate the risk posed by a given amount of waste. In 1982 the NRC's EIS established the standard for TRU concentrations in LLW at 100 nanocuries per gram. The performance assessment for the RWMC maintains that the TRU concentration should not exceed 10 nanocuries per gram. Based on this performance assessment, no LLW disposal occurs at the INEL with TRU concentrations in excess of 10 nanocuries per gram.

Storage and Transportation

108. The SSP states that the DOE-HQ moratorium on shipping potential mixed wastes will not be lifted until procedures are in place to minimize liability. The result is hazardous waste being stored that should be shipped off site. What is being planned in FY 1993 to ensure that the procedures are being developed? (S1-21, S2-16, S2-30)

The options for disposal of hazardous waste at off-site locations are currently being studied through the Strategic Plans for Hazardous Waste at the INEL. These off-site locations will be

permitted facilities capable of safely disposing of hazardous waste.

109. Considering the moratorium on off-site shipment, and the inability to remove from storage or generate additional mixed waste as a result of Land Disposal Restrictions, what measures are being taken to ensure container integrity when the waste is in "limbo"? What is the oldest piece of waste at the Mixed Waste Storage Facility (MWSF), and what is the design life of the containers in use there? (S2-33)

The RCRA requires that hazardous waste storage facilities be inspected at least weekly. In addition to meeting this requirement, the MWSF is "walked down"—a visual safety check of the entire facility and its operations—every day. One purpose of the inspections and walk downs is to look at container integrity. If a problem is found with one of the containers, appropriate action is taken immediately.

Several different types of containers are used at the MWSF. Waste is required to be stored in a container that is compatible with the particular waste. Waste stored at the MWSF is kept indoors and is not exposed to the weather. In the event that a container does start leaking, it would be noticed during either the weekly inspection or the daily walkdown. The MWSF has secondary containment capable of containing any spill, even if every container in the facility was spilled simultaneously.

The design life of the containers varies and is not considered to be an issue. The oldest piece of waste at the MWSF was received on April 22, 1986.

110. A statement is made in the Draft SSP that a new mixed-waste storage building has been constructed to house waste awaiting incineration. As a result of the Land Disposal Restriction expiration, this facility should not be receiving or discharging any waste. Is it

being used at present or is it idle? (S2-34)

The new mixed waste storage building which was constructed to house incinerable waste from the Waste Experimental Reduction Facility (WERF) has been completed and is now idle awaiting the restart of WERF. When WERF comes back on line, the storage facility will serve only to house the waste on-site that is awaiting incineration.

111. The SSP does not state whether the ANL-W TRU waste inventories at the RSWF are planned for disposal at the WIPP. What is the plan for this waste? (S2-44)

The minor amounts of on-site generated TRU waste are received at the RWMC or RSWF for interim storage until treatment and/or shipment to WIPP. Greater detail is available under the heading of "Storage" for TRU waste in Chapter 6, "Waste Management."

112. Monitored Retrievable Storage Sites (MRSs) are for commercial spent fuel so why are they mentioned in the SSP for DOE-ID fuel? Greater clarity is needed on MRS—it is not certain that all spent fuel will go to MRS sites. If MRS sites are opened, what INEL materials are destined for them? What INEL spent fuel is commercial that could be accepted at an MRS? There should be a second repository for noncommercial fuel (defense-related fuel). Which INEL fuels can go where? (P-2, P-3, B-23, B-24, B-25, W11-13, S2-11)

The final SSP has been changed to explain that MRS is not an option for spent fuel at the INEL. MRS sites are for commercial spent fuel and are not considered an option for government-owned spent fuel. In addition to government-generated spent fuel, the INEL stores materials from commercial reactors, such as Fort St. Vrain spent fuel and core debris from the Three Mile Island facility. It is possible that such commercially produced material could be sent to MRS for staging or storage before shipment to a permanent repository.

113. MRS effectively exists. It makes sense. The MRS program will centralize spent fuel at various locations. (P-4)

The MRS program for centralizing the storage of commercial spent nuclear fuel is still under development and is being administered by DOE's Office of Civilian Radioactive Waste Management (OCRWM). For more information on this program call 1 (800) 225-5513 or write OCRWM Information Center, P.O. Box 44375, Washington, D.C. 20026.

114. The Draft SSP briefly addresses plans to abandon the Test Area North (TAN) water pool, where Three Mile Island debris and other assorted fuels are stored. The FY-1993 SSP also should include a similar discussion for Building 603 at the ICPP where pools and fuels are beginning to corrode and create problems. (S2-48)

The CPP-603 Fuel Storage Facility basins are scheduled to be shutdown as soon as possible due to seismic deficiencies. All remaining fuels will be removed from the basin to other storage facilities. Removal of the basin water and associated equipment, plus decontamination of the pool walls and floor to reduce radiation and contamination levels, will be necessary to get the storage area in a safe configuration to start D&D activities. Removal of the fuel and facility preparation is scheduled to be complete by FY 2005.

115. Shipments of high-level mixed waste from naval and commercial reactors should be banned from Idaho. (W2-9)

DOE-ID receives no high-level mixed waste from any source, navy or otherwise. The INEL does receive Navy spent fuel, but no applicable statute, regulation, or order defines spent fuel as high-level waste. All other shipments of spent fuel, including shipments from commercial and research reactors, may be suspended until completion of the ER and WM EIS.

116. The statement "some of the storage containers are approaching their design lives" should state exactly how many or what percent of total storage containers

are approaching or have exceeded their design lives. (S2-41)

The Transuranic Storage Area at the RWMC began operations in 1970. Drums and boxes of waste were placed on asphalt pads with an earthen cover in a retrievable configuration. The design life for this storage was set at 20 years. The total volume of waste stored on these pads is 53,611 cubic meters. To date some of the stored waste (34%) has exceeded the 20-year design life by a maximum of two years. An additional volume (26%) is nearing this 20-year design life within two years. The remainder (40%) will meet the 20-year design life beyond two years to the maximum of 10 years. Efforts are under way to design and construct an enclosure to ensure safe and contained retrieval of the waste on these pads. Following retrieval the waste will be characterized, repackaged, and shipped to WIPP or stored in the RCRA-approved storage modules and await treatment at the IWPF.

117. What waste is being shipped into INEL and how long will it stay there? Has any waste been shipped out? If we can store waste safely at the INEL, the public will support it. In the spent fuel management plan there are plans to send fuels to the INEL from off-site sources. Does DOE have the resources to handle the receipt of spent fuel? Is all waste coming from off-site spent fuel? How does the spent fuel management plan impact WM activities at INEL? Is this plan covered in the ADSs? The SSP should include all ADSs that pertain to WM, and exactly what projects are to be accomplished in FY 1993. (TF-10, TF-11, B-9, B-14, B-21, W5-11, S1-12, S2-15)

The only waste that is received from off-site is TRU waste generated by INEL, shipped to ANL-East in Chicago for testing and then returned to the INEL. As stated in the Draft SSP, the state is aware of this activity.

DOE-ID stores spent fuel in several locations at the INEL. The impact of receiving spent fuels from off-site on the WM program is minimal because most spent fuel management is funded through either defense programs or nuclear energy programs. Currently the only WM funded task for

spent fuel is the dry storage project discussed in the spent fuel section of Chapter 6, "Waste Management," and included in ADS 4307-EG. If additional storage facilities are needed, they will be funded by the appropriate program.

DOE is currently evaluating the spent fuel situation in its national Programmatic Environmental Impact Statement (PEIS) and INEL ER and WM EIS. DOE anticipates both of these documents will be complete by 1995. Spent fuels at the INEL will remain in storage here until a permanent repository is available. DOE is currently studying the Yucca Mountain site in Nevada as a possible repository location and commercial fuels stored at the INEL could be sent there. DOE estimates that the earliest Yucca Mountain could be open, if it is found suitable, would be around 2010.

118. The Draft SSP states that the final requirements for remote-handled TRU waste are unknown and that no certification or licensed transportation capabilities exist for remote-handled TRU waste. The FY-1993 SSP should mention who is working in this area and what is being done. (S2-40)

Efforts associated with the remote-handled TRU waste are being coordinated through the process of WIPP waste acceptance criteria development. The primary focus of this criteria has been on the contact-handled TRU waste which makes up the vast majority of waste destined for WIPP. Criteria development for the remote-handled TRU waste is being prepared along with resolution of the transportation issue. A successful series of contact-handled TRU waste shipments will be performed before making remote-handled TRU waste shipments.

Disposal

119. Is DOE-ID planning to construct a Low-Level Waste Disposal Facility (LLWDF) or a Mixed Low-Level Waste Disposal Facility (MLLWDF) and if so, what are the new disposal technologies that will be used? The FY-1993 SSP must be consistent on this issue, and should include specifics. (The inconsistencies on

this issue include references to a new LLW Treatment and Disposal System as compared to p. 121 of the Draft SSP, which refers to a new LLWDF, and p. 122, which has a section on a new LLWDF. ADS ID-1368-EG on New Facility Planning refers to a MLLWDF and a MLLWTF.) (S2-18, S2-38)

Planning efforts are under way to develop and construct new facilities at the INEL to more efficiently deal with the MLLW and LLW generated through operations or from ER cleanup efforts. These facilities will be designed to treat both MLLW and LLW. The strategy is to destroy or render nonhazardous, through treatment, the characteristic hazardous constituents and reduce the listed hazardous constituents below the level of regulatory concern, thus virtually leaving only the low-level radioactive components. EPA requires that listed hazardous wastes always be listed even after treatment unless a petition is made to delist the waste. Therefore the disposal facility must be designed to accommodate the listed hazardous waste disposal requirements unless DOE can obtain a variance due to treatment.

Because the EPA requires that any listed waste continue to be listed even after treatment, the treated listed waste must continue to be called "mixed," and treated as such in disposal. Due to this, the proper terminology for the new INEL LLW disposal facility is the MLLWDF to recognize the EPA listed waste requirement. DOE is hopeful that INEL treated mixed waste may be delisted, thus eliminating the mixed complication.

To avoid confusion in the SSP, the treatment facility is referred to as the Mixed/Low-Level Waste Treatment Facility and the disposal facility is referred to as the Low-Level Waste Disposal Facility. This is an attempt to keep the discussion as clear and simple as possible, recognizing that for all intents and purposes, the waste will no longer contain hazardous components following treatment.

Among the advanced technological options being evaluated for long-term structural and radiological performance for the new Low-Level Waste Disposal Facility are engineered above-grade, earth-mounded, concrete disposal vaults. This

discussion has been added to the New Low-level Waste Disposal Facility section.

120. In the SSP discussion of plans for a new LLW disposal facility, a statement is made concerning new disposal technology which will significantly reduce the chance of contamination to the environment. What are these new disposal technologies? Commentors expressed opposition to a new Low-Level Waste Disposal Facilities dump for mixed wastes. (S2-38, W5-21)

The Low-Level Waste Disposal Facility is a planned treatment facility that will be designed to treat waste so that it is acceptable for disposal at a permitted facility. The new technologies include: pilot scale ion exchange, amalgamation, solidification, stabilization, and macro encapsulation. In no way will this facility be designed to dispose of waste within the facility itself.

121. What disposal options for MLLW are currently under consideration? A statement is made in the Draft SSP that a "large" volume of LLW is generated from D&D activities. Generation rates reported by the Radioactive Waste Management Information System do not support this. More specific reporting may be required for the Radioactive Waste Management Information System to reflect such claims. (S2-31)

The key to disposal of MLLW at the INEL is to treat it first in order to be able to dispose of it properly. At the INEL, MLLW is placed into interim storage before treatment. After proper treatment, waste that has passed RCRA standards is disposed of at a permitted facility. A disposal option for MLLW currently under consideration includes incineration at the WERF, which could treat a majority of the MLLW at the INEL. At present, work is under way to address the combustible treatment operations at WERF and resume treatment in mid-1993.

At present, the Radioactive Waste Management Information System (RWMIS) is used to report generation rates from current D&D activities.

Generation rates for future activities are not included.

122. What has happened to DOE's plans to manage local municipal landfills which may be used to dispose of the INEL's solid municipal waste? This was one of the goals listed in the FY-1992 SSP, but is not mentioned in the FY-1993 SSP. What are the plans? What progress was made in reaching the FY-1992 goal? What is the role of the Solid Waste Transfer Station? (IF-5, S1-10, S2-27)

Following thorough investigations of INEL municipal waste, the DOE has determined that the waste generated can be more economically placed in the on-site, existing industrial waste landfill. The off-site landfill and Solid Waste Transfer Station are no longer part of DOE-ID's plans. Greater detail is available in the nonhazardous waste section of Chapter 6, "Waste Management."

The text now includes a "change box" which, along with others, has been placed throughout the final SSP to better identify changes in DOE-ID planning. The placement of these change boxes is in response to this and other comments collected during the public meetings that voiced frustration over the inability to correlate prior planning to current intentions.

123. Evaporation is not currently used as a disposal method for liquid LLW. This will not occur until the liquid effluent treatment and disposal facility is on line. Low-level liquid effluent, evaporator overheads specifically, are discharged to the "service waste" system at the ICPP and into one of two percolation ponds. (S2-32)

Evaporation is currently used to significantly reduce the volume of contaminated waste that must ultimately be processed through the calciner. Liquid from the evaporator (evaporator overhead condensate) is currently introduced into the service waste disposal system and sent to the percolation ponds. Radioactivity in the resulting waste discharged to the ponds is so low as to be below regulatory concern. In late FY 1993, condensate from the evaporator will be sent to the Liquid Effluent Treatment and Disposal facility where it

will be revaporized, passed through high efficiency particulate air filters to ensure removal of any residual radioactivity, and released to the atmosphere through the main stack.

124. The paragraph on page 121 of the Draft SSP concerning LLW is very weak. It could be more clearly stated than "some LLW is disposed of at the RWMC." It should be stated that radionuclides are being deposited directly into shallow open trenches for disposal. (S2-37)

The introductory paragraph for "Disposal of LLW" in Chapter 6 has been adapted as follows: "LLW generated at the INEL is disposed of at the RWMC. The waste is placed in pits and covered with a thin layer of earth. A new state-of-the-art facility is being designed to accommodate the INEL's LLW disposal needs. This new facility will be used when the RWMC is closed in the year 2000."

125. On p. 13 of the Draft SSP it states "Transuranic (TRU) waste generated prior to 1970 must await the development of a separate repository." Has the process for identifying this site begun? (B-5, M-9)

No facility or repository currently exists or is being planned to accommodate this waste. DOE is currently considering possible scenarios to resolve this issue.

126. Where is the repository for high-level waste (HLW) and spent fuel storage? How long will these wastes be stored at the INEL and what will happen to them next? The SSP should identify any interim actions DOE is considering for HLW until a geological repository is available. Will DOE commit to sending HLW and spent fuel to the Yucca Mountain repository? The Nevada Test Site should be used to dispose of waste. INEL must not remain or become a "temporary" or permanent dump for nuclear and hazardous waste. All plans and proposals to expand INEL as a waste storage facility should be put up for public scrutiny. DOE needs to stop playing checkers with waste and should be responsible for WM and disposal

because they generated it. (B-15, B-16, B-36, B-38, W2-8, S1-22, S2-10)

Currently, there is no spent fuel or high level waste repository for disposal. Spent fuels at the INEL and elsewhere will continue to be safely stored until a permanent repository is available. DOE is currently studying the Yucca Mountain site in Nevada (adjacent to the Nevada Test Site) as a possible repository location and commercial fuels stored at the INEL could be sent there. DOE estimates that the earliest Yucca Mountain could be open, if it is found suitable, would be around 2010. Government-owned fuels that are not eligible for disposal at Yucca Mountain will have to await the development of a separate repository. The public will have an opportunity to scrutinize the entire scope of ER and WM activities at the INEL when the Draft ER and WM EIS is released for public review. The management of government-owned waste and spent fuel is the responsibility of DOE.

127. The SSP needs to disclose the uncertainty of waste reaching a final repository. The SSP discussions of both the WIPP and Yucca Mountain sites imply they are reliable assumptions when in reality, they may not be so reliable and Yucca Mountain and WIPP may not open. DOE should state these disposal options as assumptions, not as given. (B-16, B-37, M-27, W5-22, W10-2, S1-22, S2-42)

The sections in the final SSP that describe these two repositories have been redrafted to ensure that the uncertainty of these two facilities is clear. It is true that both WIPP and Yucca Mountain may not be opened for disposal, or that there may not be sufficient space for INEL wastes and spent fuel. DOE-ID is therefore pursuing two paths. The assumption for the purpose of roadmapping assumes that neither facility will open and that DOE-ID will need long-term interim storage options available in the future. At the same time, however, DOE-ID must be prepared to ship TRU waste to WIPP in the event that it does open, requiring the funding of activities in preparation for potential shipments to WIPP.

WIPP has recently made some very encouraging progress at resolving the issues associated with its opening. The U.S. House and Senate, as well as

President Bush, signed a bill that transferred the land where WIPP is located to DOE. EPA will now establish the conditions that must be met to proceed with disposal activities. It is still the full intention of DOE to ship TRU waste to WIPP for ultimate disposal. While the exact timing has fluctuated dramatically and continues to be uncertain, the expectation is that the WIPP will open.

128. The FY-1993 SSP states that loading of test bins at the WIPP site is expected to take several years. The FY-1993 SSP should address how this will be accelerated. The Draft SSP states "production rate shipments of transuranic (TRU) waste stored at INEL will begin after the Waste Isolation Pilot Project receives approval . . ." What are production rate shipments? (S2-42, S2-45)

This discussion has been adapted to state that the test phase for WIPP has an expected duration of five to seven years and that following this test phase, routine shipments will then begin from the INEL to WIPP. The term "production rate" is jargon that has been changed to "routine" to reflect the intended meaning. What will become "routine" will be largely determined by the situation at the INEL when and if the WIPP receives approval to open.

129. Why not use INEL resources to solve the problem of disposal of existing waste? Are there enough resources to resolve the problem? Research and development needs to focus on permanent disposal solutions. (B-17)

There are two discussions about research and development relating to HLW and spent nuclear fuel disposal. The Transition Activities discussion (see Chapter 4) discusses the transition of the ICPP's mission from reprocessing of spent nuclear fuel to conditioning HLW and spent nuclear fuel for final disposal. The focus of this set of activities is resolution of some of the problems posed by nuclear waste disposal. Chapter 8, "Technology Development" describes research and development activities to resolve WM issues at the INEL and

around the DOE complex. The mission of technology development is to provide permanent solution to current problems of waste remediation, treatment, storage, and disposal. Technology development activities are coordinated at DOE-HQ to ensure that solutions are developed for the DOE Complex as a whole.

130. One solution to the disposal issue would be to stop producing waste. Continued generation of waste makes an existing problem much worse, and moving waste around doesn't solve the problem. Eliminate on-site waste production at its INEL source to the extent possible, and don't site waste-producing projects in Idaho. (B-18, W2-10, W8-1, W9-1)

DOE-ID has an aggressive waste minimization program to eliminate or reduce the amount of waste generated by operations. DOE-ID conducts programs as directed by Congress and the President. The determination of which programs should receive funding is a decision made by Congress and the President. If the public feels that certain programs that generate waste should be curtailed, they should express these concerns to Congress and the President.

Treatment

131. Is there a way to make radioactive waste safe and nontoxic? (B-19)

Radioactive waste is toxic because it emits radiation as the radioactive elements decay. There is no treatment that eliminates the phenomenon of radioactivity. Only time will allow the radioactive component to decay off, thus rendering the remaining material less radioactive. DOE treatment, storage and disposal of radioactively contaminated substances is thus intended to separate and/or reduce the volume of the radioactive portion of the waste and isolate it from the environment so that it can decay to levels that are below concern. In the case of LLW, this takes place through land burial. LLW decays to safe levels in a relatively short period (decades). TRU and high-level mixed wastes require an extremely long time (centuries) to decay to safe levels and therefore are disposed of in geologic repositories that will be stable for long periods of time.

132. The SSP's Transition Activities chapter discusses "processing." What does this mean? (B-20)

The processing referred to describes the treatment of wastes or fuels to condition them for safer long-term storage and final disposal. For greater detail, please see the Transition Activities discussion in Chapter 4, "Corrective Activities and Transition Activities." (Please note that the discussion of transition activities that was presented as Chapter 5 in the Draft SSP has now been included as part of Chapter 4 in this final SSP.)

133. What is the ratio of cold chemical to sodium-bearing waste for calcining high-level sodium waste at the ICPP? (M-47)

The process ratio for sodium-waste calcination using cold aluminum nitrate is currently 3 parts aluminum nitrate to 1 part sodium waste. However, if the technical specifications can be changed, it has been demonstrated that the same process can be run at a ratio of 1 to 1. DOE-ID is currently in the process of trying to change the technical specifications, but this change has to go through an approval process.

134. Separating radioactive from hazardous waste to eliminate mixed waste appears to be done out of desire to circumvent RCRA restrictions regarding mixed waste. Explain the rationale for this treatment. (M-48, W5-14, W5-24, W10-3)

Mixed wastes (wastes that are both radioactive and hazardous) pose a unique challenge. Because they are radioactive, they are regulated by a set of DOE orders that stipulate handling and disposal criteria. Because they are hazardous, they are regulated by RCRA requirements. These regulations compete and sometimes contradict each other. Recent rulings and legislation regarding Land Disposal Restrictions for hazardous components of mixed wastes prohibit the generation of mixed waste unless there is a way to treat or eliminate the hazardous components in the waste. In many cases, even after the hazardous component of a mixed waste is destroyed through treatment, the resulting radioactive waste is still regulated by the state under RCRA. The RCRA law and recent

rulings by the EPA and Congress on mixed wastes strongly encourage treatment that results in wastes that are more easily and safely handled. DOE-ID is working with the state to address the treatment of hazardous components in mixed waste.

135. For years DOE has said that it "calcines," or solidifies its liquid high-level mixed waste. But it was discovered recently that 1.5 million gallons of liquid high-level mixed waste have accumulated at INEL because high sodium concentrations gum up the calciner. When will the technology to fix this situation be developed? (W2-7)

The technology does exist, and sodium-bearing high-level liquid waste stored in the tank farm has been processed in the past by blending it with non-sodium-bearing wastes for calcination. Pilot plant tests show that when sodium waste is not blended with other nonsodium waste, "nodules" will form during calcination which causes problems in maintaining the bed in a fluidized condition in the calciner, plus problems with calcine transport and calcine retrievability. Blended with other non-sodium-bearing wastes, the resulting calcine exhibits none of these characteristics. Work is now progressing on development of an alternate calcining method to process sodium-bearing wastes after all non-sodium-bearing wastes are gone. The current option is to blend the waste with aluminum nitrate for processing. This method of disposal has been demonstrated to be successful, but increases the resulting calcine volume (waste generated) significantly. Alternative methods are being studied in an effort to reduce waste generation.

136. On p. 140 of the Draft SSP, the section on treatment mentions conditioning spent fuel. Wouldn't this generate more HLW? If so, this should be addressed in the Plan. (S2-47)

A decision has not been reached on what treatment processes (if any) will be required for preparation of spent fuel for disposal in a permanent federal repository. A variety of fuel conditioning processes are possible, and it is possible the spent fuel will be stored whole, or in cans. It is also conceivable that no conditioning would be required, or that some fuel at the INEL

will require repackaging. Until the waste acceptance criteria is identified and approved, it will not be known how much, if any, waste will be generated by the fuel conditioning process. New conditioning technologies will not be implemented unless they provide significant waste reduction advantages.

137. DOE has announced plans to stop reprocessing spent nuclear fuel at the ICPP. If this is true, why were five old tanks at the plant recently replaced with four new tanks that will increase tank capacity by 500,000 gallons? (W5-12)

The tank farm replacement project is currently under review by the DOE in light of the decision to discontinue reprocessing. The old tanks have not yet been replaced. The project is currently on hold pending a decision on whether or not tanks will be required and if so, what volume and configuration will be required to support the new ICPP mission. This decision will be made by DOE-HQ sometime in late FY 1993.

138. Incineration is not a proven or safe technology and thus is not an acceptable option for reducing the volume of LLW at the INEL. Additionally, incineration should not be used to avoid compliance with RCRA waste laws. (W5-20)

Incineration is a technology which has been both used and approved as an acceptable option for volume reduction of LLW. As accepted by the EPA, thermal destruction is an approved "Best Developed and Approved Technology" for waste which has been designated as incinerable. The WERF has been operated in the past as an permitted facility.

139. What specific actions are occurring now to accelerate mixed-waste treatment technology at the INEL? Increased funding? Lower or eliminated regulatory standards? Work harder? (S2-24)

At the INEL, treatment of MLLW is a priority item and several treatments are available which will eliminate volumes of mixed waste. Currently, evaluation of both on-site and off-site treatment technologies are being evaluated and considered, and acceleration of development of INEL on-site technologies for all mixed waste subject to Land Disposal Restrictions is continuing. The maximization of treatment technology development is the key to treating LDR waste through increased funding and a directional focus on technology. This increased effort, however, is continuing in a safe and environmentally sound manner.

140. The statement "advanced treatment technologies will provide regulatory acceptable methods for treatment and stabilization of the mixed waste that currently lacks a final disposal facility" (reference page 120 [of the Draft SSP]) leads one to believe this technology is in place. What are some of the advanced treatment technologies and how do Land Disposal Restriction requirements affect their development? (S2-35)

Advanced treatment technologies to be used for mixed-waste treatment are considered bench-scale treatments. Bench-scale treatment is defined as a treatment available on a small scale. These bench-scale treatments are currently available to treat a limited amount of waste and are waste specific, meaning that the waste must be well defined before processing. The focus of these bench-scale treatments in the recent past has been in the areas of amalgamation (formation of the waste form into a unified mass, thus rendering the waste harmless) and ion exchange (extraction of a hazardous portion of a waste onto a different media, thus changing the makeup of the waste from a hazardous form to a nonhazardous form). Land Disposal Restriction requirements have had a very positive effect as the development of mixed-waste treatment processes have been accelerated in order to reach compliance with these requirements.

Technology Development

141. The Buried Waste Integrated Demonstration (BWID) discussion on p. 162 of the Draft SSP implies exhuming the entire Storage Disposal Area at the RWMC. DOE-ID should focus on in situ processes to reduce cost. (M-26)

The BWID is looking at the remediation of buried waste from a “systems standpoint.” In other words, from the initial waste characterization to postmonitoring. DOE-ID has been considering various system options, including ex situ and in situ options, with an emphasis on ex situ. Testing of in situ technologies at DOE have not been promising thus far, although the EPA has been testing in situ remediation on contaminated soils at Arnolds Air Force Base. In the three phases of remediation being examined by BWID—characterization, retrieval, and treatment—DOE strives for a systematic approach with a broad view of the problem so the best technology, financially and technically, can be selected.

142. There is tremendous potential in the development of new technologies in the areas of environmental cleanup and WM. Possible new commercial applications include robotics, in situ vitrification, bio-processing and two-dimensional bar coding of waste. (W1-3)

DOE recognizes this potential and appears to be ready to give the Office of Technology Development \$330–350 million for the upcoming fiscal year. Outgoing Energy Secretary Watkins made public participation in the DOE Technology Development program a priority and provided direct funding to DOE field offices to ensure DOE was never in competition with the private sector, but was doing its best to involve the private sector in technology development. Additionally, the Office of Technology Development has led the way in writing prioritization language to make it easier for industry to be involved in procurement, with an emphasis on commercialization.

This strategy by the Office of Technology Development has proven to be successful in several arenas, including two-dimensional bar coding, a private industry development that was recently demonstrated to Deputy Energy Secretary Leo

Duffy for the purpose of incorporation into the DOE system. Single-dimensional bar coding is currently being pursued by the DOE with the INEL serving as the lead laboratory. To date, the effort has involved 20 sites across the country.

143. The Idaho Falls Chamber of Commerce strongly supports and encourages DOE-ID and Congress to fully fund the ICPP Spent Fuel and Waste Management Technology Development Plan. Implementation of this plan will guarantee the long-term importance of the ICPP, while also accelerating the time when this material can be moved off site to a permanent repository. (W1-4)

Ultimately, funding decisions are made by the President and Congress. DOE-ID appreciates the Chamber’s support and encourages local organizations and individuals to voice their support for specific programs to their elected representatives in Washington, D.C.

Labor and Contractor Issues

144. What is DOE-ID doing to consider community stability in its short-term and long-term planning process? Have there been considerations toward farming work out to local contractors (such as the upcoming work on Pit 9) versus using out-of-state resources? (IF-3)

This subject is not included in the SSP. It is a goal of DOE-ID to use local contractors whenever feasible in performing work at the INEL. Regardless of which firms win contracts to do work at the INEL, hiring preferences will generally be given to local personnel. With a sizeable pool of workers with the desired security clearances, safety training, and site knowledge necessary to do work at the INEL, southeastern Idaho should continue to be a valuable source of labor.

145. Who has responsibility for ER and WM activities at INEL? What are the contractor’s responsibilities? (P-25)

The ultimate responsibility for ER and WM activities lies with DOE management. Chapter 1, “Introduction to the Site-Specific Plan,” outlines INEL’s organization and administration and identifies contractor responsibilities. The WM

responsibilities of each contractor are also discussed.

146. What if activities change hands (i.e., a new contractor)? (P-26)

Activities conducted at the INEL are performed by contractors under the jurisdiction of DOE-ID. If contractors were to change, the activities would continue at DOE-ID's direction with different contractor management.

Other Concerns

147. What are the possible impacts of DOE reconfiguration and reorganization on the INEL? (IF-4)

The "Transition Activities" section of Chapter 4 is devoted to discussing the impacts of changes at DOE-ID in response to changing world climate and changing direction from DOE-HQ. The result is a shift in mission away from defense-related efforts. Transition activities highlight expected changes at the INEL as result of this shift. Any changes that may result from reconfiguration of the DOE complex will be outlined in this chapter as they come to light.

148. What is the potential threat to human health and the environment? Compare the risks to everyday, recognizable activities (taking into account the issue of choice in the activities). (P-8)

Chapter 2, "Overview of Waste Issues," includes a discussion of "Potential Threats to Human Health and the Environment." This discussion identifies the risks associated with cleanup in terms that are typically used by risk assessment experts, namely, the probability of cancer exposure. These risks are often expressed in numbers such as "one in a million" or "10 to the minus 6." Numbers such as these understandably make it difficult for individuals to assess their personal significance. As a result, people often ask for perspective on the relative risks. As the comment implies, however, it is difficult to compare the involuntary risks associated

with cleanup with everyday risks that are voluntarily chosen by an individual.

The reason for this difficulty in comparing risks is explained by communication experts in terms of "outrage" factors that affect the meaningfulness of a given risk to individuals. We all have different values that we attach to risks, but generally communication experts have found that the following outrage factors greatly influence the significance we attach to risks (Table F-3). Generally the more outrage factors associated with a risk, the less acceptable that risk will be to us.

Low Outrage	High Outrage
Voluntary	Involuntary
Natural	Human-made
Familiar	Exotic
Controlled by individual	Controlled by others
Fair	Unfair
Provides benefit	No perceived benefit
Trusted source	Untrusted source
Moral	Immoral

Table F-4. Outrage Factors.

Many of these outrage factors are connected with the risks posed by environmental contamination at INEL. As a result, DOE tends to avoid the use of risk comparisons, given the vast difference in perception between risks from contamination and the risks from everyday life. In addition, many people feel that these comparisons tend to trivialize concerns that may be very meaningful to some individuals. For example, it would be very difficult to argue that the risk of dying from a bicycle accident on your vacation can be compared to the risk of being unwittingly exposed to a contaminant introduced to the environment by the federal government as part of a program that you as a citizen may not support.

With these warnings in mind, the voluntary activities and associated risks presented in Table F-5 allow some comparison to the risks from contamination.

**Amount of an activity that would result
in a one-in-a-million
chance of a death occurring:**

Riding 10 miles on a bicycle
Driving 300 miles in a car
Flying 1000 miles in a jet
Drinking half a liter of wine
Spending three hours in a coal mine

Table F-5. Associated Risks of Voluntary Activities.

**149. DOE should express
employment/work accidents at INEL
compared to other industries. (P-24)**

Statistics about the safety of the INEL workplace are available through the DOE Systems Safety Development Center located at the INEL. The Center keeps and publishes quarterly accident rates for DOE field offices across the nation using Occupational Safety and Health Act reporting guidelines. For injury/illness data, the Center compares information with Bureau of Labor statistics, while vehicle and aircraft data is compared with rates used by the National Safety Council. DOE uses subgroupings of "operation type" to compare with industry classifications such as research, construction activities, production, and security services. Statistics averaged over a five-year period show the DOE is less than half the rate—or twice as safe in some categories—than private industry when doing similar work. For example, over a five-year period the total injury/illness case rate for DOE is 2.9 compared with 8.5 cases per 200,000 work hours for the private sector. In lost work days, the rate for DOE is 31.9 compared with 75.2 for private industry, and for fatalities the rate is 2.3 for DOE compared with private industry statistics of 5.2 based on 1,000,000 worker years.

**150. What are landlord activities?
Landlord activities should be referred to
as "operations." (TF-1, TF-5)**

Landlord activities are maintenance and operational activities that support the infrastructure of INEL. Chapter 7 of the SSP is dedicated to describing landlord activities. As inferred by the commentor, landlord activities and landlord

operations are synonymous. The term "landlord" is used throughout the DOE complex when referring to this function.

**151. Why isn't there more information
on the Breeder Reactor Program? (B-1)**

The SSP focuses on ER and WM. Discussions about research programs in the SSP are, therefore, only intended to provide background to understand the cleanup and WM implications of the program. The Experimental Breeder Reactor is operated by ANL-W. For more information on this program, contact ANL-W at (208) 533-7754.

**152. What is Argonne National
Laboratory-West? What does it do, who
owns it, and what does it generate in the
way of waste? (B-27)**

ANL-W is owned by DOE and operated by the University of Chicago for DOE-Chicago. Its primary mission is to provide basic support to liquid metal reactor research. ANL-W generates low-level, TRU, mixed, hazardous, and nonhazardous waste.

**153. What has DOE accomplished? Has
nothing been achieved in the last two
years? (B-35)**

Discussions of major accomplishments are included in both Chapter 5, "Environmental Restoration," and Chapter 6, "Waste Management." These discussions identify achievements made by DOE-ID with respect to ER and WM. Each program has notable achievements, which are identified in each chapter.

**154. The definitions of groundwater,
vadose zone, subsurface water, aquifer
(confined and unconfined), water table,
waste grouting, potentiometric surface,
and perched water need to be
reexamined. Groundwater is subsurface
water with pore water pressure less than
one atmosphere. (M-24, W4-3)**

In response to this comment, DOE-ID has reviewed and corrected terms in the glossary for both clarity and technical accuracy.

**155. What will be included in the INEL
sitewide EIS and what is its schedule? Is
NRF included? Will it be comprehensive**

and if not, why not? The FY-1993 SSP describes a site-specific ER and WM EIS, which would assess INEL's activities in terms of cumulative impacts. This EIS should support tiered environmental assessments for future activities. Also, impacts from the WERF incinerator should be included. (M-46, W5-8, W5-25, W5-26, S1-24, S2-50)

The scope of the ER and WM EIS will include analyses of the reasonable foreseeable impacts of on-going and proposed ER and WM activities and alternatives. The analyses will include current and projected INEL waste streams and spent fuel as well as emissions and effluents from all site areas including NRF and ANL-W. Activities included in the EIS will be: environmental cleanup, decontamination and decommissioning, waste and spent nuclear fuel management, and technology development. See Chapter 9, "Environmental Impact Assessment," for a more detailed discussion of the INEL ER and WM EIS.

156. DOE must explain why the EIS for the site under the National Environmental Policy Act (NEPA) has been postponed to 1996. (S2-12)

At the November scoping meetings for the EIS, the schedule presented for the final EIS was January 1995 based on the scope identified in the Notice of Intent. An earlier schedule planned for the final EIS to be issued in 1998, so the schedule has actually been accelerated.

157. Please provide proposed dates for the scoping process for the draft Environment Impact Statement on the altered mission of the ICPP. (W10-9)

Scoping was conducted on the INEL ER and WM EIS in November 1992. That EIS will address ER and WM activities at all INEL facilities, including the ICPP.

158. The Quality Assurance chapter in the Draft SSP is grossly inadequate. (W10-11)

In response to this comment, DOE-ID reviewed and expanded Chapter 10, "Quality Assurance."

159. The FY-1993 SSP states that programs other than ER and WM are included in the INEL Institutional Plan. If this is true, the Institutional Plan should be subject to public review and comment with adequate lead time for review. (S1-17)

This comment has been shared with the developers of the Institutional Plan.

160. DOE-ID's implementation of NEPA/CERCLA integration is a concern. At one point in the SSP, DOE asserts that "most remedial action activities will not result in a significant impact to the environment" (p. 171 of the Draft SSP). However, DOE earlier defined major federal actions as those that may significantly affect the quality of the human environment (p. 24 of the Draft SSP). Continued reliance on CERCLA documents recycled as Environmental Assessments (EAs) fails to meet NEPA requirements. While NEPA/CERCLA integration is still being developed, the state expects all DOE NEPA regulations will be followed, including predecisional reviews. (S1-23, S2-51)

DOE-ID is currently conducting studies and compiling NEPA documentation on all ER and WM activities at the INEL. The final EIS, which is scheduled for release in FY 1996, will include all required public reviews and meet all regulatory requirements.

161. The list of Anticipated Documents in Appendix E includes previously prepared documents. If Appendix E is intended to provide the status of documentation, completed projects should be appropriately identified. The sitewide EIS is absent from the list. This calls into question the accuracy of the list and DOE-ID's commitment to provide a plan for future compliance. (S2-57)

Appendix E provides the level of NEPA documentation required for each activity in an ADS. The date identified indicates when the documentation was or will be prepared. Those activities that identify an EIS requirement are

activities that will be included in the ER and WM EIS, formerly known as the sitewide EIS.

RESPONSE TO DOE HEADQUARTER'S COMMENTS ON THE DRAFT FY-1993 SITE-SPECIFIC PLAN

[Editor's note: This section has been included in the document in an effort to open the internal comment process to the public. The following includes comments and criticism received from DOE-HQ on the Draft SSP. Each comment includes a Draft SSP page reference and a description of the action which was taken in response to the comment.]

HQ1. Page 13, second paragraph:
Reference is made to the fact that some reclassified LLW may be treated to concentrate the TRU fraction so that the waste can be disposed at WIPP. Is this consistent with DOE policy vis-a-vis WIPP? Is it permissible to concentrate TRU so that it can be disposed at WIPP?

This strategy has not been approved of by DOE-HQ but is an alternative that will be evaluated in the future. The SSP text states that this "may" occur. The wording will be adjusted to state "One alternative being considered is to treat the LLW to concentrate it so that . . ."

HQ2. Page 23: The Consent Order resolving the 1990 NON/NOV for RCRA violations is missing from the agreements mentioned in this section. Is there a reason for this?

There currently is no agreement in place for LDR wastes. DOE-ID has committed to the state that a formal agreement will be in place before any further mixed waste generation. No discussion will be provided in the SSP.

HQ3. Page 32: A number of commitments are listed under the general heading of "Environmental Restoration." I would suggest that this heading be changed to "Environmental Restoration and Waste Management" as a number of the commitments listed really have more to do with WM than ER (e.g., WERF trial burn, treatment and disposal options, TRU waste generation).

The heading will be changed to read "Environmental Restoration and Waste Management Commitments."

HQ4. Page 107: The discussion under INEL Land Disposal Restriction Status is a bit confusing and hard to follow. It is stated that the major concern is solvents and California list waste. What about "thirds" waste? I thought that was the major concern.

Likewise, it is difficult to tell what mixed wastes are covered under the National Capacity Variance that expired May 8 [1992]. I would suggest explicitly stating that "thirds" waste were covered under the variance.

Also, no mention is made of DOE-ID's efforts to pursue an LDR agreement with the state. Was this left out intentionally?

I would suggest reviewing this whole section and seeing if it can be polished up a bit. Maybe have one of the INEL RCRA gurus take a look at it.

This section has been thoroughly reviewed and edited by our RCRA gurus to accurately incorporate reviewer comments. Negotiation of an LDR agreement with the state is not progressing and is therefore not mentioned.

HQ5. Page 120, first paragraph, "Treatment": ICPP is referred to as a MLLW treatment facility. This is very confusing. ICPP treats high level waste. I know there is the issue of what actually is HLW and that various waste streams are fed into the tank farm at ICPP for calcination. However, I think it is only going to confuse people and maybe raise red flags if ICPP is referred to as a mixed low level treatment facility. I would

suggest deleting the references to ICPP as a MLLW treatment facility.

The discussion of the PEW Evaporator belongs under HLW rather than under LLW. All ICPP efforts are associated with HLW waste streams. The discussion will be moved.

HQ6. Page 150, Landlord New Facility Planning Section: I think there are some formatting problems with the way the various line item projects are listed. Some have bullets, some don't. Some facilities are listed twice—INEL Medical Facility, RESL Upgrade, TRA Fire and Life Safety. Please review section and fix.

The bulleted items are sufficient. The others are redundant and will be deleted.

HQ7. The June 15 memorandum from EM-14 indicates that a discussion of the ultimate uses for each site should be included where appropriate and feasible. It does not appear that ultimate land uses have been discussed.

The issue of land use planning is a difficult area to cover, primarily due to the fact that discussions on the subject are just beginning and decisions have yet to be made for the INEL. It is not yet clear whether the complete site will be maintained indefinitely or if only particular facilities will be maintained. Although the specifics are yet unclear, a discussion should be included listing the options. This discussion has been included Chapter 1.

HQ8. The guidance indicates that the Site-Specific Plans "should cover at least the period FY 1993 to 1998. The funding tables in the ER section cover the period FY 1993 to 1997.

More recent SSP guidance requires that only FY-1992 and FY-1993 funding levels be presented. The original plan was to present the funding levels from FY 1992 through FY 1998 in the final SSP after all comments had been incorporated. The most recent SSP guidance revises this plan to now reflect only FY 1992 through FY 1993. The out-year funding estimates are not provided in this SSP.

HQ9. There appears to be some misunderstanding about how the public comments on the Site-Specific Plans are to be handled. The guidance indicates that "site-specific comments received during the Five-Year Plan and Activity Data Sheet development process should be incorporated to the extent possible in the development of the SSPs." The SSP schedule indicates that the SSPs are expected to be released on September 28 for a 60-day comment period and that the Comment Response Documents, "which specify how public comments will be addressed in the next site-specific planning cycle," are expected to be issued on January 20 [1993].

With agreement from DOE-HQ Five-Year Planning staff, the INEL SSP process is on a more proactive schedule with the public. Instead of waiting until September to release the SSP for public review and comment, a draft SSP was issued (mid-July 1992) for review and comment. Comments on this draft are being solicited and public meetings were held in August 1992. Comments received will be incorporated into the final SSP and documented in a "Response to Public Input" as an appendix to the final SSP. This process allows for review and comment on the SSP and meaningful response to these comments within this year's budget cycle.

HQ10. The Foreword indicates that the SSP will have a 30-day comment period. The guidance says 60 days.

The revised INEL SSP process calls for a 30-day "Public Comment Period" on the draft SSP much earlier in the process. This comment period was extended based on public comment. The INEL SSP will be in the process of incorporating comments during the guidance-identified 60-day comment period.

HQ11. Page 1, Introduction: The end of the first paragraph appears to be missing part of the last sentence.

The sentence has been corrected.

HQ12. Page 1, Introduction: The third paragraph refers to Figures 1-1, 1-2, and 1-6. There is no reference to Figures 1-3, 1-4, or 1-5. Also, Figure 1-6 is not the relationship of DOE-Chicago as described in the text.

The reference to Figure 1-6 has been replaced with Figure 1-8. Reference to Figures 1-3 through 1-7 are made with the corresponding text they support.

HQ13. Introduction, page 6, Figure 1-6: Should the heading “Initiate ADS Dev Complete” be “Initial”? Under Task Description 7, should “Sites make available for public release” be sites “made”?

The “Initiate” serves to identify that the ADS process begins—this is correct. The word “make” refers to adapting the Roadmap for public release—this, too, is correct.

HQ14. Introduction, page 14: The second paragraph refers to Figure 1-5. Should this have been Figure 1-9?

The reference to Figure 1-5 has been replaced with Figure 1-7.

HQ15. Introduction, page 14: The second paragraph of the second column indicates that the demonstration phase for WIPP is scheduled to begin in 1991 and will extend through 1996. This information may need to be updated.

This discussion is provided in Chapter 6, “Waste Management,” and does not belong here. The paragraph will end after the reference to “See Chapters 6 and 8.”

HQ16. Introduction, page 15: The second sentence refers to “demonstrated facilities.” Should this be “demonstration facilities?”

Yes. The word “demonstrated” has been replaced with “demonstration.”

HQ17. Introduction, page 16: The last sentence of the first paragraph refers to the nearest population center as Idaho Falls. This has already been established for the INEL facility. It may not need to be repeated here.

The sentence has been deleted.

HQ18. Overview, page 26: The first sentence of the second paragraph in the second column appears to be missing the word “level” at the end of the sentence.

The word “level” has been added.

HQ19. Overview, page 28: The first sentence seems to contain an unnecessary “area” after “contamination” and before “at INEL.”

The second “area” has been deleted.

HQ20. Overview, page 32: The heading “Environmental Restoration Commitments” seems to include some commitments that should be assigned to WM.

The Heading has been expanded to say “Environmental Restoration and Waste Management Commitments.”

HQ21. Environmental Restoration, page 60: The last sentence on the page describes the funding level to be presented in the SSP. This description is not the same as that found on page 3 where the scheduled activities are referred to as what can be accomplished with “baseline funding.” Here the reference is to the minimum funding to comply with agreements and regulations. This could be confusing to the reader.

The sentence has been revised to read: “Funding information and progress charts are also included for each WAG.”

HQ22. Environmental Restoration, page 64: Each of the WAGs includes a section on Enforceable Deadlines. Throughout the SSP, these milestones indicate that the document is to be submitted for review at a specific time. Presumably, the

dates indicated are for submittal to the regulators. It would be worthwhile to indicate this in the text.

The enforceable deadlines found in the FFA/CO are for submittal of documents to regulators. The text now reflects this.

HQ23. Environmental Restoration, page 64: The WAG descriptions also include a section on Accomplishments to Date. However, the accomplishment seems to be submittal of the document. This section would be more informative if it also included the regulatory approvals. That is, the draft SOW for OU 1-07A was submitted for review in August 1991. Has it been approved?

Each WAG manager has reviewed Chapter 5, "Environmental Restoration," to strengthen and update the description. With this review this comment will be satisfied.

HQ24. Environmental Restoration, page 76: The first sentence under WAG 5 states that the WAG is divided into nine OUs. However, the figure and text describe 13 OUs.

The text has been changed to state 13 OUs.

HQ25. Environmental Restoration, page 76: Figure 6-11 contains an extra box for OU 5-12 next to OU 5-10 that does not appear to be needed.

This figure, along with similar ones, has been deleted from the final SSP.

HQ26. Environmental Restoration, page 78: The last paragraph on the page should be deleted. It is repeated in the correct location on page 80.

This paragraph has been deleted.

HQ27. Environmental Restoration, page 82: TSA and SDA are used in the paragraph at the top of the second column. Both acronyms should be defined.

These acronyms have been spelled out and are included in the List of Acronyms.

HQ28. Environmental Restoration, page 92: In the middle of the first column there is a discussion of Stationary Low Power Reactor No. 1. The text indicates that it "was destroyed in a reactor accident" that occurred in 1961. A sentence here to describe the effects of the "accident" might be worthwhile so that the public is reassured.

After the sentence ending "January 3, 1961," the following sentence has been inserted: "A thorough evaluation of the contamination was performed shortly after the accident and a full cleanup effort was initiated."

HQ29. Glossary: The term "Federal Facility Agreement and Consent Order" should be followed by "(FFA/CO)."

The acronym FFA/CO has been inserted.

HQ30. Glossary: The term "Rocky Flats Plant" should be bolded where it appears alphabetically in the list.

"Rocky Flats Plant" has been bolded.

HQ31. Appendix B, page 187: Under FTE D, I, the last word in the sentence appears to be incorrect. Should "instructure" in infrastructure?

The word should be "infrastructure"; however, this appendix has been removed from the final.

HQ32. Appendix B, page 187: Under "Sub-descriptor," the definition indicates that the valid choices are shown below. The list has been omitted.

This appendix has been removed from the final.

HQ33. Page 1: Change "ANL-W" to "Argonne National Laboratory-West, which is at INEL." This is the first ANL-W reference.

ANL-W has been spelled out.

HQ34. Page 14: The third sentence in the Spent Fuel section beginning "These elements . . . " is not clear. Revise.

The sentence has been reworded as follows:
"Spent nuclear fuel destined for the INEL is the result of . . . "

HQ35. Page 26: At the bottom of the first column, the end of the sentence should read, " . . . supply drinking water for TAN."

The words "for TAN" have been added to the end of the sentence.

HQ36. Page 30: Under Environmental Impact Assessment, the end of the fourth sentence should say " . . . Categorical Exclusion in accordance with the 4/24/92 DOE NEPA Final Rule." We can only do CXs if they are on the list in the Rule.

The phrase "in accordance with the April 24, 1992, DOE NEPA Final Rule" has been added to the end of the sentence.

HQ37. Page 30: Under Environmental Impact Assessment, replace " . . . may be integrated" with " . . . will be integrated."

The word "may" has been replaced with the word "will"; the sentence now reads, "For ER actions, NEPA will be integrated into the CERCLA process and documents."

HQ38. Page 32: Lower right under Commitment, change "A sitewide Environmental . . . " to "An INEL Environmental . . . " The ER and WM EIS is not a sitewide document the way DOE defines sitewide.

The word "sitewide" has been changed to "INEL."

HQ39. Page 33: The partial sentence at the very top should read " . . . for INEL facilities from which subsequent NEPA documents can be tiered." Delete the next two sentences: "this will not . . . to build on." Check with Rob Rothman of DOE-ID for the most current ROD schedule.

The words "from which subsequent NEPA documents can be tiered" have been added to the end of the sentence. The next two sentences have been deleted. The schedule for the ROD is FY 1996.

HQ40. Page 58: Under ER Roadmap, second paragraph, second sentence, delete " . . . and was finalized and issued in March 1992." The ER Roadmap is still in draft and has not been approved for public release.

The sentence has been changed to read, " . . . a draft was published for DOE-HQ December 11, 1991."

HQ41. Page 58: Under Major Accomplishments, second column, also add that the IA ROD was signed in December 1991.

There is no discussion of Major Accomplishments on p. 58 of the Draft SSP. It is unclear to which WAG this belongs. Each WAG manager has thoroughly reviewed this section to provide the appropriate revisions.

HQ42. Page 68: Second column, Major Accomplishments for OU 2-12. Update to indicate Proposed Plan has been issued.

Each WAG manager has thoroughly reviewed and updated this section.

HQ43. Page 78: The last paragraph on the page should be deleted. It is misplaced and duplicates the first paragraph on p. 80.

The paragraph was out of place and has been deleted.

HQ44. Page 95: The Underground Storage Tank discussion does not appear to belong under D&D.

The administration of the Underground Storage Tank Program is accomplished by the D&D Program Manager; therefore, the discussion goes hand-in-hand with D&D efforts.

HQ45. Page 168: The last sentence should be changed to be compatible with the NOI. It should read "This will cover WM and D&D of existing facilities at the INEL as well as ongoing environmental cleanup, spent nuclear fuel . . . " Also in this section, delete the term "site-specific."

The phrase ". . . even if NEPA does not legally apply" has been deleted from the next-to-last sentence of p. 169.

HQ46. Page 170, 2nd column: Under Environmental Restoration and Waste Management EIS, change first sentence to read, ". . . WM and D&D as well as ongoing environmental cleanup and related technologies . . . " to be compatible with NOI.

The sentence has been reworded as follows: ". . . impacts of existing and proposed WM, ER, decontamination and decommissioning, spent nuclear fuel, and site infrastructure activities."

HQ47. Page 171, last paragraph: Delete the phrase ". . . which may otherwise lack sufficient analysis in CERCLA documents." In the last sentence change "RI/FS" to "CERCLA" to make more general, and change "will exceed the minimum . . . " to "will meet the minimum . . . " unless "exceed" can be justified.

The first sentence has been changed to read ". . . will be supplemented as needed to assure that NEPA is incorporated." The second to last sentence now contains "CERCLA" instead of

"RI/FS." The last sentence has been changed from "exceed" to "meet."

HQ48. Glossary: Under the definition of Record of Decision, the last sentence should read, "RODs for INEL decisions under CERCLA are . . . " EPA doesn't sign NEPA RODs.

"CERCLA" has been added between "INEL" and "decisions"; the sentence now reads, "RODs for INEL CERCLA decisions are signed . . . "

HQ49. Page 192 and following: Do not list NEPA documents separately for assessment versus cleanup. One NEPA document serves both.

This comment applies to p. 205 of the Draft SSP. Various NEPA documents apply to the assessment phase as well as the cleanup. The NEPA schedule treats them as separate, as is listed in the table.

HQ50. Page 62: Figure 6-2 needs editing. Time lines for comprehensive RI/FSs are generally on the wrong line. Why are there two draft ROD submittal dates for OU 4-11? If NRF is not included in SSP, why is WAG 8 listed?

This has been reviewed by the WAG managers and has been updated.

HQ51. Page 63: The first three sentences under OU 1-05 (bottom of p. 63 and top of p. 64) do not belong and should be deleted.

The sentences have been deleted and the words "Physical Description" are now in boldface.

Codes	Source
IF-1 to IF-5	Idaho Falls public meeting, August 19, 1992.
P-1 to P-27	Pocatello public meeting, August 20, 1992.
TF-1 to TF-13	Twin Falls public meeting, August 24, 1992.
B-1 to B-47	Boise public meeting, August 25, 1992.
M-1 to M-55	Moscow public meeting, August 27, 1992.
MB-1 to MB-25	Moscow Telephone Briefing, September 22, 1992
S1-1 to S1-25	State Oversight Program's written submission, received at the Boise public meeting on August 25, 1992.
S2-1 to S2-59	State Oversight Program's written submission, received October 8, 1992.
W1-1 to W1-4	Ira Koplow (on behalf of the Greater Idaho Falls Chamber of Commerce), written submission, received August 24, 1992.
W2-1 to W2-13	Snake River Alliance Bulletin, written submission received from Deanah Messenger at the Boise public meeting, August 25, 1992.
W3-1 to W3-5	League of Women Voters of Moscow, written submission, received August 27, 1992.
W4-1 to W4-5	David Allman, written submission, received at Moscow public meeting, August 27, 1992.
W5-1 to W5-26	Chuck Broschius (on behalf of the Environmental Defense Institute), received September 14, 1992.
W6-1 to W6-2	Mary McReynolds, written submission, received September 3, 1992.
W7-1 to W7-5	Walter Bentley, written submission, received September 3, 1992.
W8-1 to W8-2	Rick Horn, written submission, received September 18, 1992.
W9-1 to W9-2	Nancy Symons, written submission, received September 28, 1992.
W10-1 to W10-11	Mary McReynolds, written submission, received October 2, 1992.
W11-1 to W11-6	Beatrice Brailsford (on behalf of the Snake River Alliance), written submission, received October 5, 1992.

Table F-5. Index of Comments by Source.