DOE/ID-10333
Revision 2

U.S. Department of Energy
Idaho Operations Office

INL Site Pollution Prevention Plan

March 2007

Idaho Cleanup Project

DOE/ID-10333
Revision 2

INL Site Pollution Prevention Plan

March 2007

Prepared for the
U.S. Department of Energy
DOE Idaho Operations Office

INL SITE POLLUTION PREVENTION PLAN

DOE/ID-10333
Revision 2
DRF No.: 314448

~~February 2007~~ March 2007 3/23/07

Approved by

E. D. Sellers, Manager
Idaho Cleanup Project
DOE Idaho Operations Office

3/13/07
Date

Robert C. Iotti, President
Idaho Cleanup Project
CH2M-WG Idaho, LLC

2/21/07
Date

John J. Grossenbacher
Director, Idaho National Laboratory
President, Battelle Energy Alliance, LLC

2/26/07
Date

Paul Divjak
President and General Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

2/23/07
Date

EXECUTIVE SUMMARY

It is the policy of the Department of Energy (DOE) that pollution prevention and sustainable environmental stewardship will be integrated into DOE operations as a good business practice to reduce environmental hazards, protect environmental resources, avoid pollution control costs, and improve operational efficiency and mission sustainability. In furtherance of this policy, DOE established five strategic, performance-based Pollution Prevention (P2) and Sustainable Environmental Stewardship goals and included them as an attachment to DOE O 450.1, Environmental Protection Program. These goals and accompanying strategies are to be implemented by DOE sites through the integration of Pollution Prevention into each site's Environmental Management System (EMS).

This document presents a P2 and Sustainability Program and corresponding plan pursuant to DOE Order 450.1 and DOE O 435.1, Radioactive Waste Management. This plan is also required by the state of Idaho, pursuant to the Resource Conservation and Recovery Act (RCRA) partial permit.

The objective of this document is to describe the Idaho National Laboratory (INL) Site P2 and Sustainability Program. The purpose of the program is to decrease the environmental footprint of the INL Site while providing enhanced support of its mission. The success of the program is dependent on financial and management support. The signatures on the previous page indicate INL, ICP, and AMWTP Contractor management support and dedication to the program.

P2 requirements have been integrated into working procedures to ensure an effective EMS as part of an Integrated Safety Management System (ISMS). This plan focuses on programmatic functions which include environmentally preferable procurement, sustainable design, P2 and Sustainability awareness, waste generation and reduction, source reduction and recycling, energy management, and pollution prevention opportunity assessments.

The INL Site P2 and Sustainability Program is administratively managed by the INL Site P2 Coordinator. Development and maintenance of this overall INL Site plan is ultimately the responsibility of DOE-ID. This plan is applicable to all INL Site contractors except those at the Naval Reactors Facility.

CONTENTS

FIGURES

TABLES

ACRONYMS

ACRC	Ag Container Recycling Council
AMWTP	Advanced Mixed Waste Treatment Project
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
BBWI	Bechtel BWXT Idaho, LLC
BEA	Battelle Energy Alliance, LLC
CTR	charter
CWI	CH2M◆WG Idaho, LLC
DEMP	Departmental Energy Management Program
DEQ	Department of Environmental Quality
DOE	Department of Energy
DOE-HQ	Department of Energy Headquarters
DOE-ID	Department of Energy Idaho Operations Office
DOE M	Department of Energy Manual
DOE O	Department of Energy Order
DOJ	Department of Justice
DOT	Department of Transportation
EFCOG	Energy Facility Contractors Group
EMS	Environmental Management System
EO	Executive Order
EPA	United States Environmental Protection Agency
EPEAT	Electronic Procurement Environmental Assessment Tool
EPP	Environmentally Preferable Purchasing
FEC	Federal Electronics Challenge
FEMP	Federal Energy Management Program

Fleet Ops	Fleet Operations
FSRIA	Farm Security and Rural Investment Act
HDPE	high-density polyethylene
HQ	DOE-Headquarters
IBC	International Building Code
ICP	Idaho Cleanup Project
INL	Idaho National Laboratory
IRC	INL Research Center
ISMS	Integrated Safety Management System
IWAC	INL Waste Acceptance Criteria
Labs21	Laboratories for the 21st Century
LEED	Leadership in Energy and Environmental Design
LNG	liquefied natural gas
M&O	management and operating
MEP	Material Exchange Program
MSDS	material safety data sheet
NIST	National Institute of Standards and Technology
NRF	Nuclear Reactor Facility
OAs	operational assessments
ODS	ozone depleting substance
P2	pollution prevention
PDO	Property Disposal Office
PPOA	pollution prevention opportunity assessment
PRDO	Property Reutilization and Disposal Office
R&D	research and development
RCRA	Resource Conservation and Recovery Act

READ	Recycling Electronics and Asset Disposition
SNAP	Significant New Alternatives Policy
USDA	U.S. Department of Agriculture
WGS	Waste Generator Services

INL Site Pollution Prevention Plan

1. INTRODUCTION

1.1 Purpose

This document describes the Idaho National Laboratory (INL) Site's Pollution Prevention and Sustainability Plan. This plan specifies pollution prevention and sustainability programs and methods to achieve the goal of protecting the air, water, land and other natural and cultural resources impacted by the INL Site. It is intended to satisfy Department of Energy (DOE) requirements and other drivers as identified in Section 1.3. Consequently, this plan is designed to describe the pollution prevention and sustainability programs and activities of DOE-ID and three of the primary contractors at the INL Site. Battelle Energy Alliance, LLC (BEA) is the primary management and operating (M&O) contractor supporting DOE's activities for the INL. CH2M◆WG Idaho, LLC (CWI) is managing contractor for the Idaho Cleanup Project (ICP). Bechtel BWXT, LLC (BBWI) is the primary M&O contractor for the Advanced Mixed Waste Treatment Project (AMWTP). In addition, DOE-ID, BEA, CWI, and BBWI have many additional support contractors that provide a variety of services. The INL Site refers to all operations, facilities, and land managed by DOE-ID.

Requirements for INL Site contractors are discussed in Section 2.1.3, Contractor Responsibilities. This plan will be reviewed annually and updated as necessary. This plan will be distributed to INL Site contractor personnel responsible for the various programs and methods discussed in Section 4, Program Elements.

1.2 Scope

The Pollution Prevention (P2) and Sustainability Program scope incorporates waste prevention, reduction of environmental releases, environmentally preferable purchasing, environmental stewardship in program planning and operational design, and recycling of solid waste. The program is designed to decrease the environmental impact of the INL Site while providing enhanced support of its mission.

This plan reflects the goals and policies for P2 and Sustainability at the INL Site and represents an ongoing effort to make pollution prevention and sustainability part of the INL Site's operating philosophy.

Objectives of the P2 program at the INL Site can be divided into the categories of cultural and technical. Cultural objectives include:

- Foster a philosophy among employees to protect the environment while carrying out the various missions of the INL Site
- Enhance communication of P2 and Sustainability objectives, goals, methods, and ideas laterally and vertically among INL Site organizations and contractors
- Promote integration and coordination between waste generators and waste managers on P2/waste minimization matters
- Identify and modify policies, procedures, or practices that may be barriers to P2
- Create incentives for recognition of employees who excel in the area of P2.

Technical objectives include:

- Comply with federal, state, and local regulations and DOE requirements for P2
- Reduce or eliminate the generation of waste streams through source reduction and substitution, product reformulation, improved housekeeping, inventory control, process modification, and onsite reuse and recycling of materials to protect the air, water, land and other natural and cultural resources impacted by the INL Site
- Identify and implement new methods and technologies to improve P2 and Sustainable practices at the INL Site
- Promote the use of non-hazardous materials in plant construction, maintenance, and operations to minimize the risks to human and environmental health
- Collect and exchange P2 information from fellow DOE laboratories and other appropriate sites through technology transfer, outreach, and educational networks.

This plan is a reference and guidance document for INL Site managers, operations personnel, and support staff. It contains the policy, objectives, strategies, goals, and support activities of the INL Site P2 and Sustainability Program. The use of the term "hazardous characteristics" is not limited to its usage under the Resource Conservation and Recovery Act (RCRA), but includes other programmatic lists of hazardous materials and constituents (i.e., the U.S. Department of Transportation [DOT] hazardous materials lists). A glossary of pollution prevention and sustainability terminology is presented in Appendix A.

1.3 Regulatory Background

Requirements and implementing guidance for P2 are found in federal regulations, Executive Orders (EOs), DOE Orders (DOE O) and Directives, state-issued permits, and state of Idaho regulations. RCRA requires that hazardous waste generators establish a program to reduce the volume or toxicity of waste to the degree determined by the generator to be "economically practicable." The hazardous waste manifest contains just such a statement; therefore, by signing the hazardous waste manifest, the hazardous waste generator certifies that this requirement has been fulfilled. Generators must also identify in their biennial reports to the U.S. Environmental Protection Agency (EPA) and the state of Idaho the efforts undertaken during the year to reduce the volume and toxicity of waste generated, and the changes in volume and hazardous characteristics actually achieved. Waste generators must also report waste minimization results in their annual submission of Toxic Chemical Release Inventories under the Superfund Amendments and Reauthorization Act to the state of Idaho and EPA. The Farm Security and Rural Investment Act of 2002 (FSRIA) requires federal agencies to purchase biobased products. A list of regulatory requirements is presented in Appendix B. The primary P2 requirements and implementing guidance are as follows:

- EO 13423[1] – 'Strengthening Federal Environmental, Energy, and Transportation Management.' This order (issued January 26, 2007) consolidated and strengthened previous 'Greening the Government' executive orders (EO 13148[2] – 'Greening the Government through Leadership in Environmental Management,' EO 13101[3] – 'Greening the Government through Waste Prevention, Recycling, and Federal Acquisition,' EO 13123[4] – 'Greening the Government through Efficient Energy Management,' and EO 13149[5] – 'Greening the Government through Federal Fleet and Transportation Efficiency') and established new and updated goals, practices, and reporting requirements for environmental, energy, and transportation performance and accountability.

NOTE: *At the time of revision to this P2 Plan, applicable DOE Orders, regulations, and references had not been revised to reflect the revoked 'Greening the Government' orders (EO 13148, EO 13101, EO 13123, EO 13149) and the subsequent implementation of EO 13423. Consequently, some discussions and descriptions referencing the 'Greening the Government' orders are retained.*

- EO 13221[6] – "Energy Efficiency Standby Power Devices." This order requires federal facilities to purchase electrical devices that consume no more than one watt when used in their standby power consuming mode.

DOE O 450.1[7], Environmental Protection Program, requires that Contractors ensure that their Integrated Safety Management System (ISMS) includes an Environmental Management System (EMS) which provides "for the systematic planning, integrated execution, and evaluation of a pollution prevention program." The EMS should address the reduction or elimination of the generation of waste; the reduction or elimination of pollutants released to the environment; the reduction or elimination of the use of Class I ozone-depleting substances (ODS) through source reduction, re-use, segregation, and recycling; and the procurement of recycled-content materials and environmentally preferable products and services. The Order requires that the Contractor's EMS include Site-specific goals that contribute to the accomplishment of DOE P2 and Sustainable Environmental Stewardship Goals (DOE O 450.1).

DOE O 435.1[8], Radioactive Waste Management, and DOE M 435.1-1[9], Radioactive Waste Management Manual, establish policies, guidelines, and minimum requirements by which DOE manages its radioactive and mixed waste. The order requires compliance with EO 13101 and The Pollution Prevention Act of 1990. The manual states that "waste minimization and pollution prevention shall be implemented for radioactive waste management facilities, operations, and activities to meet the requirements of EO 12856[10], Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, and EO 13101, Greening the Government through Waste Prevention, Recycling and Federal Acquisition."

Permit conditions within the INL RCRA Partial Permits (EPA Identification Number ID4890008952) require DOE to annually submit to the state of Idaho Department of Environmental Quality (DEQ) a certification that the "permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable and the proposed method of treatment, storage, or disposal is the most practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment." Likewise these RCRA permit conditions require DOE-ID to submit a waste minimization review and plan every four years.

1.4 Description and Mission

The INL Site was established in 1949 as the National Reactor Testing Station to provide the nation with innovations in nuclear technologies. The INL Site covers an area of approximately 890 square miles in southeastern Idaho, west of Idaho Falls. Figure 1 shows the location of the INL Site and its major facilities. In addition, offices and research laboratories are located in the City of Idaho Falls, including the Willow Creek Building and the Engineering Research Office Building, all of which make up the Science and Technology Campus.

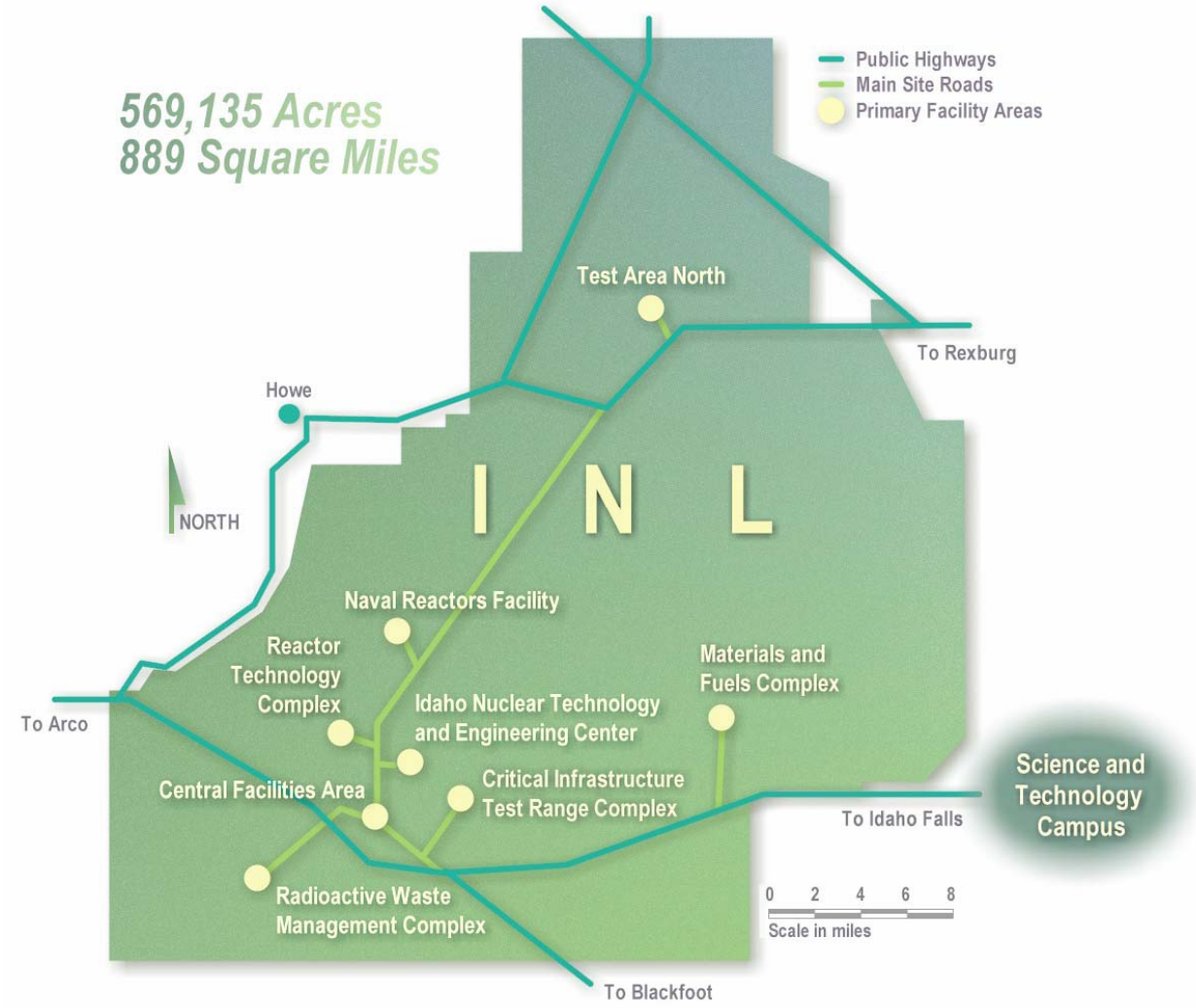

Figure 1. Location of the INL Site and major facilities.

The INL is a science-based, applied engineering National Laboratory dedicated to meeting the nation's environmental, energy, nuclear technology, and national security needs. The INL is a multi-program, federally funded research and development (R&D) center emphasizing applied engineering to provide solutions for use across the DOE complex, as well as regionally, nationally, and worldwide. BEA is the M&O contractor for the INL.

The primary mission of the ICP is to complete a specific work scope based on the contract with DOE. The cleanup contractor is focused on achieving the end state as defined in Section C of the contract while meeting regulatory requirements through the contract completion date. CWI is the primary contractor for the ICP.

The AMWTP is located at the Radioactive Waste Management Complex. Its mission is to meet all technical and regulatory requirements to safely retrieve, characterize, treat and package transuranic waste for shipment to an appropriate geologic repository for disposal. BBWI is the primary contractor for the AMWTP.

Many of the programs and activities discussed in this plan are shared by the three contractors. For instance, the INL buses are managed by BEA, but also used by CWI. The reuse and recycling subcontracts are managed by CWI but also used by BEA and BBWI. Together, all of the programs and activities discussed in Section 4 make up the INL Site's P2 and Sustainability Program.

As by-products of production, R&D, environmental restoration, and accelerated cleanup activities, the INL Site generates a variety of waste materials. These include industrial, commercial, hazardous, mixed, and radioactive wastes.

1.5 ISMS

Pollution prevention became a part of planning, operations, and work activities at all INL Site facilities, as an integrated element of the Contractors' ISMS and EMS. Pollution prevention requirements, goals, and training are implemented through the Contractors' procedures and environmental instructions for facilities, processes, materials, and equipment. Because P2 and waste minimization concepts were integrated into the Contractors' activities, in 2000, the DOE-ID P2 Coordinator determined that facility-specific waste minimization plans are no longer required.

This plan will continue as evidence that the Site and Contractors have a waste minimization program in place. Facility managers shall continue their commitment to reducing hazardous, radioactive, mixed, and sanitary wastes to comply with ISMS criteria, Executive Orders, DOE O 450.1, and EPA and state of Idaho regulations. All employees at the INL Site receive P2 and waste minimization awareness training.

1.6 Pollution Prevention Policy

The environmental policies of BEA, CWI, and BBWI establish each company's commitment to P2 and sustainability. Pertinent selections from each company's environmental policy follow.

1.6.1 Idaho National Laboratory P2 Policy

"It is INL's environmental policy to conduct research, development and demonstration for energy, national security, and the environment in a manner that protects, preserves, and nurtures human health and the environment and is in full compliance with applicable environmental laws, regulations, and other requirements. We will:

- Exercise world-leading environmental stewardship to protect the unique natural, biological and cultural resources of the lands and facilities managed by INL.
- Further demonstrate responsible environmental stewardship through effective resolution of legacy INL environmental issues, both independently and in concert with ICP.
- Establish documented environmental objectives and targets and update them as necessary to reflect INL's changing needs, missions, and goals.
- Measure our environmental performance and monitor our impact on the environment and communicate the results to our employees, subcontractors, stakeholders and the public.
- Promote environmental sustainability, conserve natural resources and energy, minimize toxicity and volume of waste generated, and minimize environmental impacts throughout the life cycle of INL facilities and operations.

- Conduct all activities and manage hazardous and radioactive materials and wastes in a safe, compliant, and cost-effective manner.
- Promptly identify noncompliant conditions and encourage full disclosure and open discussion regarding compliance issues. Aggressively work to resolve identified issues.
- Conduct research and develop technologies to address legacy contamination and minimize impacts on human health and the environment.
- Develop and deploy new and enhanced environmental technologies and share this expertise with other DOE sites, the local community, and external customers.
- Conserve natural resources by reusing and recycling materials, purchasing recycled materials, and using recyclable materials.
- Continuously improve our environmental management system through self-assessment and corrective action."

1.6.2 Idaho Cleanup Project P2 Policy

As stated in the Idaho Cleanup Project's Environmental Policy, "It is the policy of CWI to conduct the ICP in a safe, compliant and cost-effective manner that protects human health and the environment. Through employee involvement and management commitment to environmental excellence, we will:

- Identify and comply with all applicable environmental laws and regulations.
- Use all means practicable to minimize or eliminate any newly generated wastes. Whenever possible, newly generated wastes shall have a clear disposition path before they are generated.
- Protect the unique natural, biological and cultural resources associated with ICP activities.
- Conserve natural resources by reusing and recycling materials, purchasing recycled materials, and using recyclable materials.
- Establish documented environmental objectives and targets and update them as necessary to reflect CWI's changing needs, missions, and goals.
- Consider the input of our stakeholders when weighing alternative courses of action.
- Measure our environmental performance and monitor our impact on the environment and communicate the results to our employees, subcontractors, and stakeholders.
- Continuously improve our environmental management system through self-assessment and corrective action."

1.6.3 Advanced Mixed Waste Treatment Project P2 Policy

The AMWTP P2 policy is recognized in its Environmental Policy. The AMWTP Environmental Policy is available in the Environmental Management System Program Description and on the company's intranet and internet web pages. The policy states:

> It is the purpose of the AMWTP, and the policy of BBWI, to protect the environment by shipping transuranic waste to an appropriate geologic repository for disposal.

- We will conduct all business activities in an environmentally responsible manner, free from recognized hazards.
- We will comply with applicable environmental, health, and safety laws and regulations; consider the concerns of all stakeholders when evaluating alternative courses of action; and remain alert to new opportunities to enhance environmental soundness.
- We will foster the sustainable use of our earth's resources through reducing the amount and toxicity of trash discarded, reusing items, and recycling materials when economically practicable.
- We will promote effective environmental stewardship by our suppliers, customers, and other business partners.
- We commit to continuous improvement in our environmental management system, pollution prevention practices, and operational activities.

2. ORGANIZATION STRUCTURE AND RESOURCES

The responsibilities for implementing and administering this plan are based upon the organizational structure and interfaces established between DOE-ID and INL Site contractor personnel. DOE-Headquarters (HQ) establishes the goals delineated in this plan. Contractor management implements the requirements and provisions of this plan. Day-to-day operations and coordination of P2 and Sustainability Programs between contractors is handled through the P2 Steering Committee.

2.1 Organizational Responsibilities

2.1.1 DOE-ID

DOE-ID establishes requirements for the DOE-ID P2 Program in response to EOs, Federal Regulations, and DOE Orders. The manager provides general direction for program efforts, allocates resources accordingly, and designates a DOE-ID P2 Coordinator to oversee the program and to ensure that P2 goals and reporting requirements are fulfilled.

2.1.2 DOE-ID P2 Coordinator

The DOE-ID P2 Coordinator has the responsibility to oversee the conduct of the P2 Program and provide general guidance to the P2 Coordinator and Steering Committee for implementing the DOE-ID Plan. The coordinator also has responsibility to do the following:

- Reviews the INL Site Plan
- Reviews contractor's P2 scope, schedules, and milestones
- Reviews requirements and formats for required P2 reports
- Identifies P2 program deficiencies and necessary corrective actions.

2.1.3 Contractor Responsibilities

CWI, BEA, and BBWI are each responsible for support of DOE P2 and Environmental Stewardship goals as put forth in DOE O 450.1 and this plan. Support includes but is not limited to, program evaluation, performance monitoring, and the implementation and maintenance of specific tasks and programs identified in this plan. The Contractors also have a joint responsibility for the following:

- Provide necessary resources to comply with the requirements of the plan
- Support the P2 and Sustainability Steering Committee (Section 2.1.4)
- Transmit and distribute contractor P2 reports according to the reporting requirements of the INL Site Plan
- Maintain an internal INL Site P2 and Sustainability Program for conformance to program goals.

2.1.4 Pollution Prevention and Sustainability Steering Committee

The primary purpose of the P2 and Sustainability Steering Committee (the Committee) is to guide the P2 activities across the INL Site and to provide a forum for making decisions regarding P2 issues that affect the Site. This includes promoting cooperation and communications on P2 issues between the contractors and their respective, applicable organizations (see Section 4). The Committee oversees Site P2 efforts to ensure that the INL Site has an integrated and comprehensive approach to P2 as called for in DOE O 450.1. The Committee membership will include pertinent personnel from BEA, CWI, and BBWI such as the P2 Coordinator, BEA P2 Point-of-Contact, BBWI representative, and representatives from Fleet Operations, Sustainable Design, Energy Management, Property Management, Waste Generator Services, Environmentally Preferable Purchasing, and Chemical Services at a minimum.

In its oversight role, the Committee works to the following:

- Promotes creativity and innovation in meeting the Site's P2 and sustainability needs
- Facilitates and documents P2 and sustainability information and technology transfer across the INL Site
- Shares resources in order to promote and implement P2 and sustainability activities
- Interfaces with INL's Environmental Stewardship Committee
- Serves as an information exchange mechanism to promote general awareness of P2 and sustainability
- Facilitates participation in voluntary environmental partnership programs where there is a programmatic benefit from doing so (community outreach, technology transfer, regulatory incentives, etc.)
- Documents P2 and sustainability progress, success stories, and lessons learned
- Reviews and awards employee submissions for the Innovative Approaches to Sustainability Prize
- Reviews and selects projects for the DOE-HQ awards program
- Advocates the advantages of including P2 and sustainability in the planning and conduct of projects at the INL Site
- Develops, reviews, and selects nominations for Pollution Prevention Opportunity Assessments (PPOAs) and sets priorities for PPOA activities for the INL and the ICP
- Reviews and statuses progress on DOE-HQ P2 and Sustainable Environmental Stewardship Goals across the INL Site
- Interfaces with ICP's Chemical Management Center of Excellence.

2.1.5 Pollution Prevention Coordinator

The Pollution Prevention Coordinator essentially manages the INL Site P2 and Sustainability Program. Responsibilities include:

- Establishes, tracks, and reports P2 metrics
- Compiles and/or issues necessary reports (DOE Annual P2 Report, Quarterly Performance Measurement Reports, as applicable) and certifications (II.J.2 and II.J.4)
- Performs P2 program self-assessments
- Serves as P2 and Sustainability Steering Committee facilitator
- Publicizes P2/Waste Minimization successes and accomplishments
- Coordinates programmatic P2 activities at the INL Site
- Expands reuse and recycle practices across the Site
- Provides oversight of current recycle programs and some contracts
- Coordinates the Material Exchange Program
- Maintains and revises INL Site P2 Plan and related procedures and documents, as necessary
- Facilitates and monitors progress of PPOAs
- Participates in community involvement activities such as Earth Day
- Provides direction or guidance to Environmentally Preferable Purchasing (EPP) Program (includes DOE's Buy Bio Pilot Program)
- Interfaces with other INL facilities, DOE-ID, DOE-HQ, other DOE Sites and industries on P2 issues
- Promotes employee awareness and recognition
- Completes annual work package documentation for P2 program; tracks budget.

2.1.6 Management Responsibilities

Contractors coordinate with the P2 Steering Committee and P2 Coordinator in the implementation of the INL Site Plan. Management is responsible for establishing P2 and Sustainability policies and goals as appropriate. Specifically, management works to the following:

- Integrates company-level objectives and targets into facility and operational plans. Generally, the objectives and targets are detailed and specific to particular areas, waste streams, and processes in the facility or that result from specific operations
- Supports and communicates P2 techniques, procedures, and accomplishments to personnel
- Commits to reducing hazardous, radioactive, mixed, and sanitary wastes to comply with ISMS, Executive Orders, EPA, and state of Idaho regulations.

2.1.7 Employee Responsibilities

Each employee is responsible for applying P2 and Sustainability practices and procedures, as applicable to his/her position. In addition, employees should prevent and minimize waste, including but not limited to the following:

- Manage inventory (i.e., minimize stocks of office supplies such as letterhead that quickly become outdated)
- Substitute materials for environmentally friendly materials, where appropriate
- Conserve resources (i.e., print only what is needed, print double-sided, review documents electronically, power down electronic equipment, use e-mail for document/literature distribution)
- Reuse and recycle (i.e., paper, cardboard, toner cartridges, computers)
- Work to procedures.

Employees should continually review work processes to sustain continual improvement in P2 and Sustainability practices.

3. POLLUTION PREVENTION GOALS, OBJECTIVES, STRATEGIES, AND PERFORMANCE MEASURES

It is the policy of DOE that P2 and Sustainable Environmental Stewardship will be integrated into DOE operations as a good business practice to reduce environmental hazards, protect environmental resources, avoid pollution control costs, and improve operational efficiency and mission sustainability. In furtherance of this policy, DOE established five strategic, performance-based P2 and Sustainable Environmental Stewardship goals (Table 1) and included them as an attachment to DOE O 450.1, Change 2. These goals and accompanying strategies are to be implemented by DOE sites through the integration of P2 into each Contractor's EMS pursuant to DOE O 450.1. According to DOE O 450.1, the "accompanying strategies for achieving the P2 and Sustainable Environmental Stewardship goals are to be considered for inclusion in sites' environmental management systems, as applicable or otherwise appropriate." Mission performance and life-cycle costs are also to be considered when selecting a specific strategy.

The P2 and Sustainable Environmental Stewardship Goals, Objectives, and Strategies presented in Table 1 are taken directly from DOE O 450.1, Change 2. Again, the strategies listed are to be implemented "as applicable or otherwise appropriate." Some of these strategies may not be applicable to or appropriate for the INL Site.

All DOE sites are required to measure their progress towards meeting these goals and to make such information available annually to DOE. The DOE's proposed performance measures for these Goals, Objectives, and Targets have been included in Table 1. The performance measures align with the EMS and P2 provisions of DOE O 450.1 and will be issued by the DOE as a guidance document. These performance measures will form the basis for DOE's annual P2 Performance Tracking and Reporting System.

Table 1. Goals, Objectives, Strategies and Performance Measures.

GOAL 1	**PROTECT THE ENVIRONMENT, AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *WASTE PREVENTION***
OBJECTIVE	Reduce environmental hazards, protect environmental resources, minimize life-cycle cost and liability of DOE programs, and maximize operational capability by eliminating or minimizing the generation of wastes that would otherwise require storage, treatment, disposal, and long-term monitoring and surveillance (i.e., future environmental legacies).
STRATEGIES	• Establish operational assessments (OAs), such as PPOAs, of waste generating activities, as objectives and measurable targets in Site EMSs. • Based on OAs, establish objectives and measurable targets in Site EMSs for the prevention, reduction, reuse and recycling of waste streams generated at Sites. • Identify resources needed to implement this (P2) goal and Site-specific objectives and targets in Site annual budgetary processes. • Participate in voluntary environmental partnership programs (e.g., National Waste Minimization Program, Waste Wise, National Environmental Performance Track,) where there is a programmatic benefit from doing so (community outreach, technology transfer, regulatory incentives, etc.).
PERFORMANCE MEASURES	Has waste prevention been included as an objective and measurable target in the Site EMS? Have PPOAs of waste generating activities been included as objectives and measurable targets in the Site EMSs? Were the resources needed to implement EMS objectives and targets for waste prevention and P2 assessments: - Included in the Site budgetary process (i.e., overhead)? - Funded through alternative funding mechanisms? Describe notable waste prevention actions taken and/or P2 assessments conducted during the reporting period. Provide the following for each action: - Name of the waste prevention action taken or P2 assessment conducted - Nature of the action taken or P2 assessment conducted (e.g., source reduction, reuse, recycle) - Results of the action taken or P2 assessment conducted (e.g., actual or projected waste avoidance and cost avoidance) - Other benefits (e.g., regulatory risk reduction and/or improved mission sustainability), and whether the action taken and/or P2 assessment conducted has been nominated for a best-in-class award)

Table 1. (continued).

GOAL 1	PROTECT THE ENVIRONMENT, AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *WASTE PREVENTION*
	List any P2-related voluntary programs for which the Site was officially recognized as a participant during the reporting period, such as: - National Environmental Performance Track - National Waste Minimization Partnership - WasteWise - Adopt Your Watershed - Climate Leaders - Green Engineering - Laboratories for the 21st Century (Labs21) - Federal Electronics Challenge (FEC) - Other (please list all) List all local, state, regional, and/or national P2-related awards received during the reporting period for waste prevention, P2 assessments, reduction in environmental releases, EPP, environmental stewardship in program planning and operational design, and post consumer recycling. At the direction of your respective Program Office or Administration, report on the amounts of waste generated at the Site during the reporting period (High-Level, Transuranic, Mixed Transuranic, Low-Level Radioactive, Low-Level Mixed, Hazardous).

Table 1. (continued).

GOAL 2	PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *REDUCTION OF ENVIRONMENTAL RELEASES*
OBJECTIVE	Reduce environmental hazards, protect environmental resources, minimize life-cycle cost and liability of DOE programs, and maximize operational capability by eliminating or minimizing the use of toxic chemicals and associated releases of pollutants to the environment that would otherwise require control, treatment, monitoring, and reporting.
STRATEGIES	• Establish OAs, such as PPOAs, of activities using toxic chemicals, as objectives and measurable targets in Site EMSs. • Based on OAs, establish objectives and measurable targets in Site EMSs for minimizing the use of toxic chemicals, and reducing associated releases of pollutants to the environment (air, water, soil, biota). • Identify resources needed to implement this P2 goal and Site-specific objectives and targets in Site annual budgetary processes. • Participate in voluntary environmental partnership programs (e.g., Adopt Your Watershed, Climate Leaders, Green Engineering, National Environmental Performance Track) where there is a programmatic benefit from doing so (community outreach, technology transfer, regulatory incentives).
PERFORMANCE MEASURES	Has reduction of environmental releases been included as an objective and measurable target in the Site EMS? Have PPOAs of waste generating activities been included as objectives and measurable targets in the Site EMS? Were the resources needed to implement EMS objectives and targets for reduction of environmental releases and P2 assessments: - Included in the Site budgetary process (i.e., overhead)? - Funded through alternative funding mechanisms? Describe notable environmental release reduction actions taken and/or P2 assessments conducted during the reporting period. Provide the following for each action: - Name of the environmental release reduction action taken or P2 assessment conducted - Nature of the action taken or P2 assessment conducted (e.g., source reduction, material substitution) - Results of the action taken or P2 assessment conducted (e.g., actual or projected release avoidance and cost avoidance) - Other benefits (e.g., regulatory risk reduction/improved mission sustainability) and whether the action taken or P2 assessment conducted has been nominated for a best-in-class award).

Table 1. (continued).

GOAL 3	PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *ENVIRONMENTALLY PREFERABLE PURCHASING*
OBJECTIVE	Reduce environmental hazards, conserve environmental resources, minimize life-cycle cost and liability of DOE programs, and maximize operational capability through the procurement of recycled-content, biobased-content and other environmentally preferable products thereby minimizing the economic and environmental impacts of managing toxic by-products and hazardous wastes generated in the conduct of Site activities.
STRATEGIES	• Establish EPP objectives and measurable targets in Site EMSs • **Green Purchasing** - Specify environmentally preferable products* in the acquisition of Site supplies and services. - Procure the following environmentally preferable products, when available, affordable and effective: – EPA-designated recycled-content products – Department of Agriculture (USDA)-designated biobased-content products – EPA Significant New Alternatives Policy (SNAP) Program acceptable substitutes for ozone-depleting substances (ODS) cleaning products certified by GreenSeal, a U.S. standard setting and environmental labeling organization (www.greenseal.org) and/or EPA-designated green cleaning products • **Federal Electronics Challenge (FEC)** - Specify a preference for environmentally preferable electronics qualified through the Electronic Procurement Environmental Assessment Tool (EPEAT) or its successor, in the solicitation and acquisition of desktop computers, notebooks, and monitors. - Utilize the EPEAT network to identify specific models of desktop computers, notebooks and monitors certified by manufacturers and vendors as environmentally preferable and listed according to three tiers of ascending environmental performance and order of preference-bronze, silver and gold (www.epeat.net.). • Operate a vehicle fleet that is the most environmentally preferable possible while meeting performance, cost-effectiveness and regulatory demands. - Utilize American Petroleum Institute (API)-rated re-refined oil, retread truck tires, antifreeze/engine coolant recyclers, water recycling/reclamation vehicle wash facilities, and bio-based lubricants, fuels and degreasers/cleaners. - Utilize alternate fuel (clean air) vehicles. • Identify resources needed to implement this P2 goal and Site-specific objectives and targets in Site annual budgetary processes. • Participate in voluntary environmental partnership programs (e.g., FEC "Partner") where there is a programmatic benefit from doing so (community outreach, technology transfer, regulatory incentives). * Products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose, including materials that result in no waste, less waste or less toxic waste across the entire life-cycle.

Table 1. (continued).

GOAL 3	PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *ENVIRONMENTALLY PREFERABLE PURCHASING*
PERFORMANCE MEASURES	Has the purchase of environmentally preferable products been included as an objective and measurable target in the Site EMS? Describe performance in considering and purchasing environmentally preferable products, materials, and supplies, such as: - EPA-designated recycled content products - USDA-designated biobased content products - EPA SNAP Program acceptable substitutes for ODS - Cleaning products in GSA catalogs and/or cleaning products meeting GreenSeal specifications - "Green-label" electronics meeting EPA's EPEAT criteria

Table 1. (continued).

GOAL 4	**PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH INCORPORATION OF *ENVIRONMENTAL STEWARDSHIP IN PROGRAM PLANNING AND OPERATIONAL DESIGN***
OBJECTIVE	Reduce environmental hazards, conserve environmental and energy resources, minimize life-cycle cost and liability of DOE programs, and maximize operational capability by incorporating sustainable environmental stewardship in the commissioning of Site operations and facilities.
STRATEGIES	• Establish sustainable environmental stewardship objectives and measurable targets in Site EMSs. • **Green Building** - Apply sustainable building design criteria when planning and constructing new facilities or modifying existing facilities to optimize life-cycle costs, reduce pollution, minimize energy consumption, conserve water, and enhance indoor air quality, worker safety and productivity. - Utilize resources available through the following federal and DOE Energy Management Programs (FEMP/DEMP) to assist in the development of green buildings that are life-cycle cost effective, and meet mission and functional performance needs: – FEMP New Building Design Project Assistance – FEMP New Construction Project Assistance – DEMP Retrofit Project Assistance – DEMP Energy Management Model Program Assistance - Utilize the National Institute of Standards and Technology's (NIST) Building for Environmental and Economic Sustainability (tool for selecting cost-effective, environmentally preferable building construction products) (www.bfrl.nist.gov/oae/software/bees.html). - Include sustainable design and development criteria in built-to-lease solicitations. - Include a preference for buildings meeting sustainability provisions of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System, the Green Building Initiative's Green Globes assessment and rating tool, the Whole Building Design Guide, or the American Society for Testing and Materials' Standard Guide for the General Principles of Sustainability Relative to Buildings (ASTM E2432) in solicitations and selection criteria for acquiring leased buildings. - Retire inefficient building equipment on an accelerated basis where replacement results in lower life-cycle costs (reduced energy and water consumption, and waste generation).

Table 1. (continued).

GOAL 4	**PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH INCORPORATION OF *ENVIRONMENTAL STEWARDSHIP IN PROGRAM PLANNING AND OPERATIONAL DESIGN***
	• **Green Chemistry** - Participate in the EPA/DOE-sponsored Labs21 voluntary program dedicated to improving the environmental performance and stewardship of U.S. laboratories through the design of chemical products and analytical processes that reduce or eliminate the use and/or generation of hazardous substances. - Establish OAs, such as PPOAs, of laboratory activities, as objectives and measurable targets in Site EMSs. - Based on OAs, establish objectives and measurable targets in Site EMSs for: – development and utilization of more environmentally benign solvents and solvent-less systems that reduce or eliminate the use of toxic or hazardous solvents; – design of analytical products and processes that reduce or eliminate the use and/or generation of hazardous substances; – application of Lab21 Environmental Performance Criteria in the operation of laboratory facilities. • **Green Landscaping** - Implement cost-effective, sustainable landscape design and management practices to reduce adverse impact to the natural environment and native ecological systems. - Utilize EPA GreenScapes environmentally beneficial landscaping methods to reduce waste and energy usage, conserve water, and reduce greenhouse gas emissions. (www.epa.gov/greenscapes*)* - Identify resources needed to implement this sustainable environmental stewardship goal and Site-specific objectives and targets in Site annual budgetary processes.
PERFORMANCE MEASURES	Have sustainable environmental stewardship objectives and measurable targets been included in the Site EMS? Were the resources needed to implement EMS objectives and targets for sustainable environmental stewardship: - Included in the Site budgetary process (i.e., overhead)? - Funded through alternative funding mechanisms? Are sustainable building design and development criteria applied in: - The planning, design and construction of new facilities or modification of existing facilities? Specifically: – LEED – High Performance Sustainable Building (HPSB) principles – Other Green Building criteria – Green Chemistry principles Lab21 – Green Landscaping principles

Table 1. (continued).

GOAL 4	**PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH INCORPORATION OF *ENVIRONMENTAL STEWARDSHIP IN PROGRAM PLANNING AND OPERATIONAL DESIGN***
	- Built-to-lease solicitations? - Solicitations and selection criteria for acquiring leased buildings? Describe any notable application of the sustainable building design and development criteria during the reporting period: - Name of project - Project phase (planning, solicitation, design or construction) - Identify green building criteria applied (e.g., LEED, Green Chemistry principles such as Lab21) - Identify if DEMP Retrofit Project Assistance or DEMP Energy Management Model Program Assistance were utilized - Identify if NIST Building for Environmental and Economic Sustainability Assistance was utilized.

Table 1. (continued).

GOAL 5	PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *POST-CONSUMER MATERIAL RECYCLING*
OBJECTIVE	Protect environmental resources, minimize life-cycle cost of DOE programs, and maximize operational capability by diverting materials suitable for reuse and recycling from landfills thereby minimizing the economic and environmental impacts of waste disposal and long-term monitoring and surveillance.
STRATEGIES	• Establish post-consumer material recycling objectives and measurable targets in Site EMSs. • Recycle office, cardboard, aluminum, plastics, and glass. • Recycle spent oil, hydraulic fluid, lubricants, and solvents. • Recycle or reuse construction and demolition debris as practicable and feasible. - Reuse demolition rubble (concrete, brick, and other masonry) for grading, laying utilities, and building roads, driveways and parking areas. Pulverize and reuse gravel asphalt and sub-base. - Utilize the GSA Construction Waste Management Database to identify recyclers of 15 commonly-recycled construction and demolition debris such as concrete, asphalt, masonry, metal, plastic, and wood (cwm.wbdg.org). • Recycle empty, non-refillable, high-density polyethylene (HDPE) plastic pesticide product containers. - Utilize the Ag Container Recycling Council (ACRC), a non-profit organization that collects and recycles professional end-users' containers of EPA-registered pesticide products to include agricultural, turf, forestry, vegetative management, specialty pest control, adjuvants, crop oils, and surfactants (www.acrecycle.org). • Collect spent toner cartridges and batteries for remanufacturing. • FEC - Recycle computers, monitors and peripheral information technology electronics. • Extend the useful lifespan of computers through software upgrades; enable power management capabilities, and utilize the recycling services available through the following sources as an environmentally compliant means for disposition of end-of-life electronics: - EPA Recycling Electronics and Asset Disposition (READ) Services Government Wide Acquisition Contract (http://www.epa.gov/oamhpod1/admin_placement/0300115/index.htm), - Department of Justice (DOJ) UNICOR Electronic Recycling Program (www.unicor.gov/recycling), - General Services Administration (GSA) Federal Supply Service Multiple Award Schedule 899, Reclamation, Recycling, and Disposal Services, - Recyclers that are members, in good standing, of one or more of the following professional associations: – International Association of Electronic Recyclers – Institute of Scrap Recycling Industries – National Recycling Coalition – Electronics Industries Alliance

Table 1. (continued).

GOAL 5	PROTECT THE ENVIRONMENT AND ENHANCE MISSION ACCOMPLISHMENT THROUGH *POST-CONSUMER MATERIAL RECYCLING*
	• Recycle surplus commodities and by-products. - Utilize material exchange programs (MEP) such as Recycler's World Network (www.recycle.net) and the DOE Materials Exchange Network (wastenot.er.doe.gov) to transfer unwanted materials to alternate users. • Identify resources needed to implement this P2 goal and Site-specific objectives and targets in Site annual budgetary processes.
PERFORMANCE MEASURES	Describe Site performance in recycling obsolete computers, monitors and printers during the reporting period (including electronics returned to the vendor for de-manufacturing). Are obsolete computers, monitors and printers generated at the Site recycled? Specifically: - Return to vendor for re-manufacturing - Use of EPA READ Services Government Wide Acquisition - Use of DOJ UNICOR Electronic Recycling Program - Use of GSA Federal Supply Service Multiple Award Schedule 899, Environmental Services for Recycling of Electronic Equipment - Use of recyclers that are members, in good standing, of one or more professional recycling associations such as the International Association of Electronic Recyclers, Institute of Scrap Recycling Industries, and National Recycling Coalition - Other (If yes, please identify) Report on the metric tons of sanitary waste generated at the Site during the reporting period.

4. PROGRAM ELEMENTS

The programs discussed in this section either directly or indirectly comprise the current INL Site P2 and Sustainability Program. The AMWTP participates in these individual programs when its work scope matches the program objectives. The AMWTP is not contracted to administer any of the programs on a Site-wide scale. Where the AMWTP does not participate in the BEA or CWI Site-wide program but its scope matches the program objectives, such as the EPP Program, a similar program has been established and is administered by BBWI.

4.1 Environmentally Preferable Purchasing Program

Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," promotes the purchase of environmentally preferable products that are or can be made with recovered materials. Section 6002 of RCRA specifies that EPA develop and issue procurement guidelines that designate specific items that are or can be made with recovered materials. EPA has designated recycled-content items, each designated with the highest percentage of recovered materials practicable, taking into consideration competition, price, availability, and performance. Governmental agencies are required to develop and implement a cost-effective procurement preference program favoring the purchase of these products and services.

The Farm Security and Rural Investment Act (FSRIA) requires federal agencies to purchase biobased products. One of the FSRIA goals to promote the use of innovative biobased products, and specifies that the Department of Agriculture (USDA) develop and issue procurement guidelines that designate specific biobased products. Section 9002 of FSRIA defines a biobased product as "a commercial or industrial product (other than food or feed) that is composed, in whole or in significant part, of biological products or renewable domestic agricultural materials (including plant, animal, or marine materials) or forestry materials." Thousands of items from furniture and building materials to office paper and adhesives are available as biobased products.

The EPP Program incorporates waste prevention and recycling initiatives and ultimately expands markets for recovered materials. BEA, CWI, and the BBWI have each instituted an EPP program compliant with the above regulations.

Each contractor's EPP program includes requirements for purchasing products that are Energy Star compliant. A complete list of Energy Star labeled products can be found at (www.energystar.gov). As new items are designated by EPA and USDA, each contractor will continue efforts to purchase recycled, environmentally preferable, and bio-based products and services.

4.2 Sustainable Design

A new strategy for sustainable building (also known as green or high performance building) has been prepared and accepted by management for consideration during design and construction of all future INL buildings and major renovations of existing structures (INL/EXT-05-00331[11], INL Green Building Strategy). The recommendations are Site-specific, feasible sustainable building concepts intended to yield LEED certification for INL buildings. INL/EXT-05-00331 is intended for INL owned or built-to-lease buildings. BEA is the programmatic lead for sustainable design at the INL Site.

LEED Silver certification should be the minimum goal for all new buildings (including office buildings, laboratories, cafeterias, and visitor centers) greater than 25,000 ft^2 or a total cost of $10 million. Process buildings, which typically house energy intensive systems or processes that are not directly part of the building systems, should apply these principles but may not qualify for certification because the LEED rating system is designed for more conventional buildings.

Sustainable Design personnel actively participate in a handful of local and national voluntary partnership programs that include the Federal Network for Sustainability, the Energy Facility Contractors Group (EFCOG) Energy Efficiency Working Group, U.S. Green Building Council Idaho Chapter, and the Yellowstone Business Partnership. A handful of the staff in the Sustainable Design group are LEED Accredited Professionals.

4.3 Energy Management

The Energy Management program at the INL Site has an extensive and rewarding history of conserving energy and water in a cost-effective manner using engineering and administrative controls. Energy efficiency is directly connected to P2 in that energy reduction projects often lead to corresponding reductions in energy-related pollution. BEA is the programmatic lead for energy management at the INL Site. At a minimum, the work scope for Energy Management includes:

- Identify, develop, and implement Departmental Energy Management Program (DEMP) Retrofit Projects and alternatively funded or cost shared projects leading to increased energy efficiency.

- Identify opportunities to implement DEMP Energy Management Model Program studies and concepts into INL operations processes
- Implement sustainable design and construction processes into INL procedures, as well as design and construction efforts
- Achieve administrative energy and water use reductions through employee awareness and facility manager support
- Collect and report energy and water use at INL to DOE
- Prepare and utilize the current two-year Energy Management Plan.

Many of the energy-related services, such as energy audits, offered by the Federal Energy Management Program (FEMP) are provided in-house at the INL Site by Energy Management personnel.

Energy Management personnel actively participate in voluntary partnership programs such as the Federal Network for Sustainability and the EFCOG Energy Efficiency Working Group.

4.4 Property Disposal Office

The Property Disposal Office (PDO) performs operations to provide property reuse and disposal services. Property reuse includes INL Site reuse, transfers to other government agencies, or acquisition of excess assets from other government agencies. Disposal includes transferring, donating, or selling excess and surplus property. The PDO processes non-hazardous materials and property, which includes:

- Vehicles — passenger motor vehicles, light trucks, trailers, motor scooters, truck tractors, and heavy equipment
- Scrap — stainless steel, copper, carbon steel, brass, bronze, aluminum, and galvanized metal
- Buildings — manufactured homes and complete buildings
- Computer Equipment — CPUs, monitors, disk drives, modems, printers, and plotters
- Miscellaneous Categories of Property — industrial machinery, mills, lathes, drill presses, shears, meters, and electrical test equipment
- Office equipment — chairs, desks, tables, file cabinets, bookcases, etc.

4.5 PC Redistribution Center

The PC Redistribution Center, in conjunction with the PDO, manages the redistribution of operational personal computers (PCs) and PC peripherals for both BEA and CWI. The PC Redistribution Center and the PDO also process operational PCs and PC peripherals for distribution to school districts, nonprofit organizations, or other government agencies. BBWI manages a separate program with similar functions for the redistribution of PCs and PC peripherals.

The PC Redistribution Center determines which assets should be held for reuse at the INL Site or transferred. The PC Redistribution Center processes the PC hard drives that are to be removed from the company and prepares PCs and peripherals for redistribution within the company. The latter includes required software installation or configuration.

The PDO physically stores the PCs and peripherals, arranges for transportation, documents transactions, and sells older, surplus and non-functional PCs and peripherals. The PC Distribution Center processes the PC hard drives that are to be removed from the company and prepares PCs and peripherals for redistribution.

4.6 Waste Generator Services

Waste Generator Services (WGS), a CWI organization, is responsible for providing safe, effective, and compliant waste management services for BEA, CWI, and portions of the Nuclear Reactor Facility (NRF) and BBWI. The prime objective of WGS is to ensure waste characterization and management-related activities are performed in compliance with all applicable laws and regulations governing these activities. WGS provides full-service, turnkey, professional waste management services for waste within their project scope. Other objectives include providing a streamlined approach to waste determination, proactively working with generators to minimize the generation of waste, incorporating accountability using a structured customer relationship, and improving cost-effectiveness.

As the organization that routinely interfaces with the waste generators at the INL Site, WGS is uniquely positioned to identify pollution prevention and waste minimization opportunities early on, including pre-generation planning. PDD-1003, Waste Generation Services Program, specifically addresses pollution prevention planning (including recycle and excess). If applicable, waste minimization and pollution prevention measures performed for a particular waste stream are documented on Form 435.39, "Waste Determination and Disposition Form."

WGS is also responsible for managing recyclable and excess materials such as fluorescent tubes, all battery types, RCRA scrap metal, mercury, and lead. WGS personnel are also responsible for the management of the associated subcontracts for these materials.

4.7 Fleet Operations

BEA, CWI and BBWI each manage a Fleet Operations (Fleet Ops) organization. Bus services are managed by BEA. Taken together, the Contractors' Fleet Ops organizations maintain over 100 buses and 1,500 pieces of equipment. Maintenance facilities include a body and paint shop, tire shop, and a welding and fabrication shop. Activities include light and heavy equipment repair and engine and alternator rebuilds, testing and break-in. The vehicle fleet has been an active partner in a variety of R&D projects such as testing biodiesel in fleet buses and bio-based lubricants and degreasers/cleaners.

The Fleet Ops organizations utilize API-rated re-refined oil, retread vehicle tires, antifreeze/engine coolant recyclers, Freon recovery, water recycling/reclamation vehicle wash facilities, aluminum wheels, and a computerized paint system with less toxic paints. The Fleet Ops organizations have replaced R12 refrigerant with R134-A and ethylene glycol with propylene glycol in its vehicle fleet. The Fleet Ops organizations have converted many of its fleet to alternative energies such as natural gas, liquefied natural gas (LNG) E85 (85% Ethanol and 15% unleaded gasoline), and B20 (20% biodiesel).

The Fleet Ops organizations have actively participated in research and testing projects related to transportation issues, such as the current oil filter by-pass test. The Fleet Ops organizations recycle lead acid batteries, alkaline batteries, scrap metal, tires, wheels, and lead wheel weights.

4.8 Chemical Services

Chemical Services, managed by CWI, is responsible for establishing and maintaining consistent, compliant chemical management for both BEA and CWI (BBWI is not covered under this service) to provide life-cycle control and tracking from initial receipt of chemicals to inventory, usage and disposition. Chemical Coordinators provide customer-service oriented support to assist chemical owners, users, and requesters in obtaining chemicals quickly and cost-effectively. Chemical Coordinators are assigned to specific areas of the Site and perform, at a minimum, tasks pertaining to chemical approval, ordering, acquisition, receipt, inventory, tracking, storage, and reporting.

An important service provided by the Chemical Coordinators is the promotion of "sharing" chemicals across the Site. If chemicals are available in one area and needed in another, the Chemical Coordinator will make the appropriate contacts and arrange the transfer of the chemical to the other location. INL Research Center (IRC) employs a pharmacy-type atmosphere where chemicals in the Chemical Storage Facility are designated as shareable or non-shareable by their owners. A shareable chemical can simply be checked out of Chemical Storage, the needed amount dispensed by the user and returned. The chemical coordinator will negotiate Site-wide with owners of non-shareable chemicals upon request or in the event of urgency.

Chemical Coordinators are also a resource for compliance in the areas of chemical storage and compatibility, tracking of time-sensitive chemicals, and facility limits imposed by the International Building Code. They provide an easy, efficient customer interface with other organizations, such as WGS, Packaging & Transportation, Industrial Hygiene and Fire Protection to resolve issues and answer questions.

4.9 Material Exchange

The Material Exchange Program (MEP), managed by CWI, was developed to promote resource conservation and to discourage unnecessary disposal of usable products. The MEP encourages use of valuable resources currently in storage, and reduces the disposal of usable products. The MEP operates by locating alternate users for chemicals or other materials that may be in excess because of job completion, over-purchasing, or other reasons. Excess items may reside on the exchange for up to one year, after which the owner is notified that the item will be removed from the database and should be appropriately disposed.

Items listed in the INL Site MEP database can also be made available to other DOE facilities through the DOE complex-wide Material Exchange Program. Site personnel should contact the P2 Coordinator for assistance. The DOE complex-wide MEP has been designed for DOE staff to search, identify, and exchange, borrow or share items of interest within the DOE complex. The intent is NOT to replace other existing exchange systems, both at headquarters and in the field, but to promote material exchange within the complex through the use of a central searching and posting capability; data from each DOE facility will continue to be maintained locally. The exchange contains information on chemicals, as well as other "materials" such as equipment, scrap metal, drums, and containers.

4.10 Pollution Prevention Opportunity Assessments

PPOAs, such as P2 operational assessments or equivalent (annual process assessment reviews, facility reviews, targeted assessments, etc.) are activities to identify methods, services, or products that prevent pollution at the source, or, if that is not feasible or cost-effective, minimize the amount of pollution and recycle/reuse that which is generated. A PPOA is a systematic, structured analysis of a

process, activity, or project to identify opportunities to eliminate or reduce wastes, conserve natural resources, reduce toxic chemicals or hazardous material use, and recycle materials. These assessments can be at a level of complexity that is appropriate to facility and activity scale. The P2 Steering Committee assists in the development, review, and selection of PPOAs and sets priorities for PPOA activities.

4.11 Reuse and Recycling

Reuse and recycling involves the processing of product and waste materials for further use or the direct use of a waste for another purpose. Opportunities for reclamation and reuse of waste materials will be explored whenever feasible. Subcontracts, where proven economically practicable, are established or continued with recyclers of hazardous wastes, industrial wastes, and municipal wastes. Decontamination of tools, equipment, and materials for reuse or recycle will be used to the extent practicable to minimize the amount of waste disposed.

The INL Site currently has subcontracts in place to recycle many municipal and hazardous wastes. Most of these contracts are managed by WGS. The office recycling contract is managed by the INL Site P2 Coordinator and includes office paper, computer paper, and corrugated cardboard generated from non-radiological controlled areas. Lead, batteries (Ni-Cad, mercury, silver), silver, electronic circuit boards, cadmium, and other materials that are not radiologically contaminated, no longer used at the INL Site, and that are not prohibited for public consumption under the criteria of the DOE scrap metal moratorium are shipped off-Site for recycling by companies that meet environmental and financial audits.

The INL Site, including NRF, incorporates an extensive recycling and reuse program that includes the following:

- Batteries –gel cell, lead acid, mercury, Ni/Cad, nickel/iron, silver
- Fluorescent tubes – mercury recovered and glass recycled
- Hazardous waste – subcontract includes options for recycling valuable materials
- Lead material - subcontract
- Mercury - subcontract
- Office paper and corrugated cardboard – subcontract
- Oil (other than Fleet Operations) – subcontract; burned as alternative fuel
- Precious metals – sent to DOE Precious Metals Pool in Oak Ridge for recycling
- RCRA scrap metal - subcontract
- Silver containing material - subcontract
- Toner cartridges – subcontract; remanufactured and re-purchased by INL Site
- Wood pallets – reuse good pallets.

4.12 Environmental Review

Consideration of P2 and waste minimization practices is identified as a requirement in environmental checklists. Appropriate issues involving emissions, source reduction, material substitution, reuse and recycling, and responsible storage and disposal opportunities are evaluated to minimize or eliminate environmental degradation.

4.13 Inventory Management Review

Inventory control techniques are used in the property management system to optimize inventory size and increase the turnover of inventory. In particular, inventory control techniques are used to reduce waste resulting from excess, out-of-date, and no-longer-used raw materials. Similarly, material controls are revised or expanded to reduce raw material and finished product loss and damage during handling, production, and storage.

The property distribution streamlining initiative includes a review of inventory management techniques and includes determinations regarding how existing inventory management procedures can be applied more effectively, whether new techniques should be added to or substituted for current procedures, need for additional employee training, and identification of commodities for reduction based on current needs and usage.

4.14 Pollution Prevention Plan

The INL Site Pollution Prevention Plan (this plan) establishes a pollution prevention, waste minimization, and sustainability program consolidating DOE orders for environmental protection and waste management, and satisfies various requirements of RCRA; Executive Orders; state of Idaho; and the INL Site Waste Acceptance Criteria (IWAC). This plan focuses on programmatic functions that include environmentally preferable purchasing, sustainable design, P2 and Sustainability awareness, waste generation and reduction, source reduction and recycling, energy management, and PPOAs. This plan serves as written certification that the Site has a waste minimization program in place pursuant to permit conditions within the INL RCRA Partial Permits (EPA Identification No. ID4890008952).

5. PROGRAM DEVELOPMENT

This section is a summary of developing programs and possible strategies for meeting DOE's P2 and Sustainable Environmental Stewardship Goals (Table 1). Several of these strategies are taken directly from DOE O 450.1, Change 2.

5.1 Environmentally Preferable Purchasing Program

In 2007, the INL Site became a partner in the Federal Electronics Challenge (FEC) which is a voluntary partnership program that encourages federal facilities and agencies to purchase greener electronic products, reduce impacts of electronic products during use, and manage obsolete electronics in an environmentally friendly manner. The FEC is sponsored by the Office of the Federal Environmental Executive and the EPA. Partnership indicates a commitment to life-cycle management of a facility or agency's electronic products e.g., monitors, computers, notebooks). In addition to partnership, participants can strive for one of three recognition levels (bronze, silver, gold). The FEC encourages federal facilities to evaluate and improve their electronics management during three life-cycle phases—acquisition and procurement, operation and maintenance, and end-of-life management. The award levels build upon one another, with the bronze level requiring partners to address only one life-cycle phase, the silver level requiring partners to address two life-cycle phases, and the gold level requiring partners to address all three. The following list summarizes the requirements for each award level; note that not all are applicable to EPP. Mandatory activities for the three life-cycle phases include:

- Ensure that at least 50 percent of all monitors (CRTs and LCDs) purchased are ENERGY STAR® compliant.

- Include ENERGY STAR® requirements in the special terms and conditions in 30 percent of all contracts.
- Meet all federal regulations and executive orders for electronic equipment that address energy efficiency.
- Establish and promote policy to power off PCs when employees leave.
- Demonstrate that 25 percent of all electronic equipment is reused or refurbished within or outside the INL Site.
- Store all surplus equipment properly prior to transfer and properly package equipment for transfer to minimize potential for breakage.

The Electronic Product Environmental Assessment Tool (EPEAT) is an EPA funded tool designed to assist large institutional purchasers in the public and private sectors evaluate, compare and select desktop computers, laptops and monitors based on their environmental attributes. EPEAT is designed to evaluate the environmental performance of electronic products throughout their life cycle and consists of both a set of criteria for assessing products and a management system for their application and maintenance. Complimentary to the FEC, EPEAT will evaluate electronic products according to three tiers of environmental performance: Bronze, Silver, and Gold based on 22 mandatory criteria and 33 optional criteria in 8 categories. To qualify for acceptance as an EPEAT product, it must conform to all the mandatory criteria. Bronze products must meet all mandatory criteria, whereas silver products must meet all mandatory criteria plus at least 16 optional criteria. Gold products must meet all mandatory criteria plus at least 25 optional criteria. EPEAT performance categories are as follows:

- Reduction/Elimination of Environmentally Sensitive Materials
- Material Selection
- Design for End of Life
- Product Longevity/Life Extension
- Energy Conservation
- End-of-Life Management
- Corporate Performance
- Packaging.

5.2 Sustainable Design

The “INL Green Building Strategy” (INL/EXT-05-00331) should be reviewed on a regular basis and updated to include the latest green building strategies and additional applications such as existing buildings and minor building renovations. This is INL’s guideline for building high performance buildings that are better for both the environment and the occupants.

The Labs21 program was developed by the EPA and DOE to address energy efficiency and sustainable design issues specifically for laboratories and their unique requirements. Laboratories are complex systems that use “far more energy and water per square foot than a typical office building.” The primary guiding principle is that improving the energy efficiency and environmental performance of a laboratory requires examining the entire facility from a “whole building” perspective. Labs21 is a program designed to encourage the development of sustainable, high-performance, and low-energy laboratories by providing tools, training and education, and a partnership program. Partnership in Labs21

is strictly voluntary; however, it requires a commitment to apply sustainable design and management strategies to a specific laboratory project.

5.3 Energy Management

The INL should continue to pursue additional alternative funded projects including Energy Saving Performance Contracts and should investigate progressive programs such as continuous and retro commissioning, centralized facility control, and other new or emerging technologies. These recommendations should be included in the two-year Energy Management Plans.

5.4 Property Disposal Office

The Property Disposal Office will have an important part of the INL Site partnership in the FEC. The following summarizes the FEC requirements for each award level that are applicable to the PDO:

- Demonstrate that 25 percent of all electronic equipment is reused or refurbished within or outside the INL Site.

- Store all surplus equipment properly prior to transfer and properly package equipment for transfer to minimize potential for breakage.

5.5 PC Redistribution Center

The PC Redistribution Center will work closely with the PDO to achieve FEC partnership and strive towards one of three FEC recognition levels (bronze, silver, gold). As such, the PC Redistribution Center will assist the PDO with the following FEC requirements:

- Demonstrate that 25 percent of all electronic equipment is reused or refurbished within or outside the INL Site.

- Store all surplus equipment properly prior to transfer and properly package equipment for transfer to minimize potential for breakage.

5.6 Waste Generator Services

This section intentionally left blank.

5.7 Fleet Operations

The INL should continue to increase its use of alternative fuels in INL vehicles and portable equipment. This includes upgrading and installing the required infrastructure, modifying existing vehicles and equipment, and purchasing vehicles with flexible fuel capabilities.

5.8 Chemical Services

The Chemical Services organization manages and tracks chemicals for both the ICP and the INL. These customers utilize the Chemical Services program to supply and manage their chemicals and related needs. Chemical Services staff provide support for the life cycle management of chemicals from the beginning when chemicals are approved, through acquisition, compliant and safe storage, inventory management and reporting and finally working with Waste Generator Services for disposal of unwanted chemicals.

5.9 Material Exchange Program

The P2 program will promote the wider use of the Material Exchange Program (MEP). The MEP is an online database that facilitates the transfer of unwanted or unused materials to other INL Site programs or employees that can use them. Materials exchanged under the MEP may include chemicals, paints and paint supplies, machine shop supplies, adhesives, copier supplies, inks, lubricants, and other items. The MEP excludes radioactive or radioactively-contaminated materials, materials regulated by other programs, materials designated as a waste, and items defined by Property Management as excess materials.

5.10 Pollution Prevention Opportunity Assessments

Pursuant to permit conditions within the INL RCRA Partial Permits (EPA Identification No. ID4890008952), the INL Site is required to "conduct and complete a source reduction evaluation review and written plan," or PPOA. While at least one PPOA must be completed annually for the INL Site, increasing the use of PPOA will enhance the Site's ability to identify P2 opportunities. It will be the primary responsibility of the P2 and Sustainability Steering Committee to assist in the development, review, and selection of nominations for PPOAs and set the priorities for PPOA activities. These Site-wide assessments can be at a level of complexity that is appropriate to facility and activity scale and will be conducted by PPOA teams organized by and coordinated by the INL Site P2 Coordinator and the P2 and Sustainability Steering Committee. Nominations for PPOAs should focus on topics such as, but not limited to, waste generating activities, activities using toxic chemicals, and recycling and reuse activities.

5.11 Reduce, Reuse, and Recycling

The P2 program will promote a more aggressive resource conservation program by reducing the demand for everyday products such as office paper. Possible initiatives include:

- Set the default mode for network printers to print double-sided documents
- Make scratch pads with paper that has only been used on one side and distribute them to employees
- Reduce paper weight (i.e., purchase 20# copier paper instead of 24#)
- Make copies as needed rather than in large batches at one time
- Eliminate fax cover sheets
- Review documents electronically
- Use e-mail for document/literature distribution
- Purchase paper that has been Certified by Chlorine Free Products Association.

Opportunities for the routine reclamation and reuse of waste materials should be expanded whenever feasible. Subcontracts, where proven economically practicable, should be established with recyclers of hazardous wastes, industrial wastes, and municipal wastes.

5.12 Awareness/Recognition

The purpose of the awareness program is to promote P2 and Sustainability throughout the INL Site. The goal is to incorporate P2 and Sustainability into the decision-making process at every level throughout the INL Site. The awareness program is led by the Steering Committee and the INL Site P2 Coordinator and has the following objectives:

- Inform employees of INL Site environmental activities and P2 and Sustainability requirements, goals, and accomplishments
- Expand the P2 and Sustainability intranet webpage
- Encourage employees to participate in P2 and Sustainability
- Publicize and recognize accomplishments
- Partner with INL Energy Management and Sustainable Design to include awareness on joint P2 and Energy Efficiency topics.

Methods used to communicate include, but are not limited to, company electronic newsletters, the Steering Committee, the P2 and Sustainability webpage, and INL's Environmental Stewardship Committee.

As part of the awareness campaign, and to solicit and promote P2 and Sustainability ideas from INL and ICP employees, the Committee invites submissions from INL and ICP employees for the annual P2 and Sustainability Prize. This $500 annual prize will be awarded to the INL or ICP employee who submits the best P2/sustainability idea, as determined by the Committee. In particular, the Committee will focus on those ideas that promise to significantly improve the INL Site's sustainable and environmentally responsible practices and/or contributes substantially to environmental awareness and education at the INL and ICP.

Submissions should include:

- Completed application form (Charter [CTR]-107, "INL Site P2 Steering Committee Charter and Authorization")
- Written summary of the issue addressed, the approach taken, and the projected outcome, with cost and savings estimates, to the extent possible, not to exceed 5 pages.

Other recognition programs include DOE's Award program and the White House Closing-the-Circle Award program. The Committee will review and select nominations for DOE's Award program. Categories for nominations include Green Purchasing, Recycling, Sustainable Design/Green Buildings, and Fuel Efficiency in Transportation.

6. TRAINING AND AWARENESS

Job-specific employee training, INL EMS/ISO 14001 Training (INL935), ICP EMS/ISO 14001 Training (ICP935), and new-hire orientation training all address P2 and Sustainability and are incorporated into the INL Site contractors' central training schedules. Training objectives include:

- Describe the Environmental Policy and how it applies to each employee. Each contractor's Environmental Policy addresses P2 and Sustainability.
- Identify the programs established by each contractor at the INL to implement their Environmental Policy.
- Provide a general awareness of pollution prevention and waste minimization.

7. REPORTING AND CERTIFICATION

7.1 Reports

The P2 Coordinator prepares annual P2 performance reports which are submitted to DOE's Office of Health, Safety, and Security. The report format is determined by DOE and is completed and submitted electronically. The reports contain detailed accomplishments (Sitewide) which are reported to the P2 Coordinator from facility contacts, and waste generation numbers that are taken from the Integrated Waste Tracking System and other waste tracking databases. Recycling data comes from a variety of sources such as the INL Nonradiological Waste Management Information System, several recycling subcontractors, and the PDO. The performance reports include the data and information put forth in Table 1, Goals, Objectives, Strategies and Performance Measures.

7.2 Certification

Pursuant to Permit conditions within the INL RCRA Partial Permits (EPA Identification No. ID4890008952), DOE-ID is required to annually submit to the state of Idaho DEQ a "certification to IDAPA 58.01.05.008 [40 CFR 264.73(b)(9)] that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable and the proposed method of treatment, storage, or disposal is the most practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment." In support of this certification, each Contractor certifies to DOE-ID that a waste minimization program is in place to reduce the volume and toxicity of hazardous wastes. Likewise, these permit conditions require DOE-ID to submit a waste minimization review and plan every four years.

8. REFERENCES

1. EO 13423 – Strengthening Federal Environmental, Energy and Transportation Management.
2. EO 13148 – Greening the Government through Leadership in Environmental Management.
3. EO 13101 – Greening the Government through Waste Prevention, Recycling, and Federal Acquisition.
4. EO 13123 – Greening the Government Through Efficient Energy Management.
5. EO 13149 – Greening the Government through Federal Fleet and Transportation Efficiency.
6. EO 13221 – Energy Efficiency Standby Power Devices.
7. U.S. Department of Energy, DOE Order 450.1, Environmental Protection Program (January 15, 2003).

8. U.S. Department of Energy, DOE Order 435.1, Radioactive Waste Management (July 9, 1999).

9. U.S. Department of Energy, DOE Manual 435.1-1, Radioactive Waste Management Manual (July 9, 1999).

10. EO 12856 – Federal Compliance With Right-to-Know Laws and Pollution Prevention Requirements.

11. INL/EXT-05-00331, "INL Green Building Strategy," 2005.

Appendix A

Glossary

Appendix A

Glossary

Disposal - emplacement of waste in a manner that ensures isolation from the biosphere for the foreseeable future with no intent of retrieval and that requires deliberate action to regain access to the waste.

Generator - individual, group, or organization at a facility which produces waste.

Hazardous Waste - solid wastes that exhibit any of the characteristics of hazardous waste identified in 40 CFR 261, Subpart C (ignitable, corrosive, reactive, toxic) or are listed in 40 CFR 261, Subpart D, "Lists of Hazardous Waste."

Mixed Waste - waste which contains both radioactive and hazardous components as defined by the Atomic Energy Act, TSCA, or RCRA.

Pollution Prevention (P2) - the use of any process, practice, or product that reduces or eliminates the generation and release of pollutants, hazardous substances, contaminants, and wastes including those which protect natural resources through conservation or more efficient utilization.

Pollution Prevention Opportunity Assessment (PPOA) - evaluation and appraisal of a process, activity, or operation as a way to identify potential waste minimization opportunities.

Recycling - a material is 'recycled' if it is used, reused, or reclaimed as follows: (1) employed as an ingredient to make a product; however, a material will not satisfy this condition if distinct components of the material are recovered as separate end products, or (2) employed in a particular function as an effective substitute for a commercial product.

Sanitary Waste - non-hazardous solid waste, such as garbage, that is generated by normal housekeeping activities and is not hazardous or radioactive.

Solvent Substitution - replacement of a hazardous solvent with a less hazardous or non-toxic material for the purpose of eliminating hazardous and/or radioactive mixed wastes.

Source Reduction - the elimination or reduction of waste generation at the source. Source reduction activities and techniques include substitution of less hazardous materials, process optimization or modifications, technology changes, administrative changes such as inventory control, and housekeeping practices such as waste segregation. Results in reducing or eliminating the amount of potential waste material prior to recycling, treatment, or disposal.

Treatment - technological processes that reduce the volume, toxicity, or mobility of waste. Examples include incineration, vitrification, neutralization, chemical extraction, physical separation, and solidification and stabilization technologies.

Waste Minimization - an action that avoids or reduces the generation of waste by source reduction or reduces the toxicity of hazardous waste, improving energy usage, or by recycling.

Appendix B

Pollution Prevention Regulatory Drivers

Appendix B

Pollution Prevention Regulatory Drivers

Document/Reference	Name/Function
Resource Conservation and Recovery Act (RCRA) 40 CFR 247	Federal Procurement Guidelines
RCRA 40 CFR 262, 264-265	Generator Manifest Certification
RCRA 40 CFR 262, 264-265	Generator Biennial Report Certification
RCRA	Part B Permit Conditions
Federal Facilities Compliance Act	Mixed Waste Minimization Reporting
Emergency Planning and Community Right-to-Know Act	Toxic Release Inventory Reporting
Pollution Prevention Act	National Policy, Toxic Release Inventory Reporting
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	CERCLA Financial Liability
Clean Air Act	Clean Fuel Fleet Program, Protection of Stratospheric Ozone
10 CFR 835	Radiation Protection Programs
Toxic Substance Control Act	Bans on Chemical Substances, Significant New Use Notification
Revenue Reconciliation Act	Environmental Taxes
DOE O 450.1	Environmental Protection Program
DOE 435.1	Radioactive Waste Management
EO 13423 (January 26, 2007)	Strengthening Federal Environmental, Energy, and Transportation Management
EO 13148 (April 21, 2000) – revoked by EO 13423 on 1/26/2007	Greening the Government through Leadership in Environmental Management
EO 13101 (September 16, 1998) - revoked by EO 13423 on 1/26/2007	Greening the Government through Waste Prevention, Recycling, and Federal Acquisition
EO 13221 (March 8, 1994)	Energy Efficiency Standby Power Devices
EO 13123 (June 3, 1999) - revoked by EO 13423 on 1/26/2007	Greening the Government through Efficient Energy Management
EO 13149 (April 21, 2000) - revoked by EO 13423 on 1/26/2007	Greening the Government through Federal Fleet and Transportation Efficiency
Energy Policy Act	National Policy
Idaho Administration Procedures Act (IDAPA) 16.01.05.008	State of Idaho Certification
INL Waste Acceptance Criteria Section 1.2.1	Waste Disposal Regulations