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INEEL Long-Term Stewardship Strategic Plan



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**Prepared for the
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ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy Headquarters
DOE-ID	U.S. Department of Energy Idaho Operations Office
EM	Environmental Management
EPA	U.S. Environmental Protection Agency
FFA/CO	Federal Facility Agreement and Consent Order
HWMA	Hazardous Waste Management Act
INEEL	Idaho National Engineering and Environmental Laboratory
NE	Nuclear Energy
RCRA	Resource Conservation and Recovery Act
WAG	Waste Area Group

DEFINITIONS

Aquifer: a layer of water-saturated rock or soil through which water flows in a quantity useful to people. The rate of flow depends upon porosity and permeability, and the slope of the water table.

CERCLA (Comprehensive Environmental Response, Compensation and Liability Act): the federal law that establishes a program to identify, evaluate, and remediate sites where hazardous substances may have been released (leaked, spilled, or dumped) to the environment.

Federal Facility Agreement and Consent Order (FFA/CO): an agreement among the DOE, the EPA, and the State of Idaho to evaluate potentially contaminated sites at the INEEL, determine if remediation is warranted, and select and perform remediation, if necessary.

Groundwater: water that soaks into the ground and percolates downward through rock or soil pores until it is stopped by an impermeable layer. Natural sources are rain fall, snowmelt, and water that seeps into the ground beneath streams, rivers and lakes. Other sources can include irrigated fields, canals, wastewater drain fields, injection wells, leaking pipes, and industrial cooling ponds.

Hazardous waste: Waste that is regulated under RCRA Subtitle C. A solid waste or combination of solid wastes that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Institutional controls: generally includes all nonengineered restrictions on activities, access or exposure to land, groundwater, surface water, waste and waste disposal areas, and other areas or media. Some common examples of tools to implement institutional controls include restrictions on use or access, zoning, governmental permitting, public advisories, or installation master plans. Institutional control commitments are necessary where hazardous substances will remain onsite at levels that prevent unrestricted and unlimited use of the site.

Mixed waste: Waste that contains both radioactive and hazardous chemical components.

Perched water: groundwater that collects above a layer of relatively impermeable material, such as clay, and then slowly moves downward to the aquifer. Perched water zones are often present beneath reservoirs and industrial facilities, but disappear when the surface water source is eliminated.

Radioactive waste: Solid, liquid, or gaseous material that contains radionuclides regulated under the Atomic Energy Act of 1954, as amended, and is of negligible economic value considering recovery costs.

RCRA (Resource Conservation and Recovery Act): a federal waste management law. Its guidelines regulate transportation, treatment, storage, and disposal of waste. RCRA waste includes material that is listed on one of the EPA's hazardous waste lists or meets one or more of EPA's four characteristics of ignitability, corrosivity, reactivity, or toxicity.

Record of Decision (ROD): a public document that explains which remedies will be used at a site and why. The Responsiveness Summary contains the public comments received on the proposed actions and the agencies' responses.

Remedial Investigation/Feasibility Studies (RI/FS): a study that identifies which contaminants are present in an area, assesses the risk they pose to human health and the environment, and evaluates remedial options.

Remediation: The process of cleaning up a site where a hazardous or radioactive substance has been released.

Residual contamination: Amount of a hazardous or radioactive pollutant remaining in the environment after a natural or technological remediation process has taken place. The pollutants present potential safety and health risks to the public, site workers, or facility occupants; or render some portion of the environment unsuitable for residential use.

Unexploded ordnance: military munitions that have been primed, armed, or fused and fired, dropped, or launched but have failed to explode through malfunction or design. Unexploded ordnance poses a physical risk to human safety through the danger of explosion when it is handled or contacted, especially by machinery.

Vadose zone: the unsaturated layers of rock and soil extending from the ground surface down to the water table, or aquifer. Contaminants move at different rates through the vadose zone depending on how they react with the rock and sedimentary material.

Vapor vacuum extraction: a technology developed to extract vapor from beneath the ground by inducing a vacuum in wells located at specific depths. The vacuum forces underground vapors to flow toward the well and up into an above ground treatment system.

INEEL Long-Term Stewardship Strategic Plan

1. INTRODUCTION AND PURPOSE

Work performed at the Idaho National Engineering and Environmental Laboratory (INEEL) during the last 50 years resulted in the release of hazardous and radioactive materials into the air, soil, and water at the INEEL. The U.S. Department of Energy (DOE) has been conducting remediation projects to reduce risks to the health of the public and the environment posed by those contaminants. These remediation projects have been governed by regulatory agreements developed between the DOE, the Environmental Protection Agency (EPA), and the State of Idaho. The remedy selection decisions are made with input from regulators, stakeholders, and the public. In some cases, these decisions result in residual radioactive, hazardous, or mixed waste that is left onsite after remediation, for any of several reasons:

- Technical limitations — Technologies may not exist to reduce or eliminate contaminants.
- *Economic limitations*— Complete removal of contamination to reduce a small incremental risk to the public may not justify the cost.
- *Worker* health and *safety*—Some remediation strategies pose higher risks to workers than those posed to the public.
- Ecological damage — Some remediation strategies may result in greater environmental impacts to ecologically sensitive areas.
- *Acceptable* risk—The risk to the public can be maintained within acceptable levels established by law with a lesser level of remediation.

As the DOE completes remediation at the INEEL, the end result will comply with environmental remediation agreements. These agreements do not require that all remediated sites on the INEEL be returned to pre-existing conditions or residential use. Consequently, those sites with residual contamination require long-term stewardship to prevent unacceptable contact between waste residue and the public, and initiate subsequent cleanup activities in the event of an unforeseen increase in contaminant transport. The term “long-term stewardship” refers to all activities necessary to protect human health and the environment following completion of remediation, disposal, or stabilization of a site or a portion of a site (DOE 2001).

To manage the duties of long-term stewardship across all DOE sites, DOE Headquarters (DOE-HQ) established a National Long-Term Stewardship Program to provide the policy and direction for individual site programs and directed each site to prepare a Long-Term Stewardship Plan. DOE-HQ recognized that a single approach for long-term stewardship may not be successful at all sites. Therefore, the DOE-HQ program allows each site to design a site-specific program based upon their characteristic environment, regulatory requirements, stakeholder interest, and residual contaminants.

The purpose of this document is to describe the strategic elements of INEEL’s Long-Term Stewardship Program. This plan documents the program vision, mission, implementing goals, and objectives. Creation of a Long-Term Stewardship Program at INEEL represents a management consolidation of post-remediation responsibilities regardless of what law or agreement governs the remedy. Creation of the program does NOT change any agreed-upon obligations for the operation, maintenance, monitoring, institutional controls, or post-closure care identified in Records of Decision, HWMA/RCRA closure plans, or other agreements. Rather, creation of the LTS program is a way to

implement post-remediation responsibilities agreed to under a variety of regulations in a more efficient and focused way.

The intended users of this document are DOE Idaho Operations Office (DOE-ID) and INEEL management. INEEL staff will identify the specific activities necessary to achieve the strategic goals and objectives in an implementation plan, to be developed in Fiscal Year 2003. Together, this strategic plan and the subsequent implementation plan will become the INEEL's Long-Term Stewardship Plan and become the constitutional foundation for the INEEL Long-Term Stewardship Program.

2. ASSUMPTIONS

- DOE will continue to manage the INEEL for the foreseeable future.
- There will be more long-term stewardship scope later than there is now, as more sites reach remediation completion.
- Consolidating the administration of long-term stewardship activities is more cost effective than having individual projects manage those activities independently.
- There will be adequate funding for long-term stewardship activities and funding may come from several sources depending on agency and organization responsibility for long-term stewardship.
- Long-term stewardship responsibilities remain regardless of changes in INEEL landlord responsibility, management and organizational assignments, or the addition of new missions for the site.
- As remedial actions near completion, the laboratory's primary mission will shift to research and development as a significant national applied engineering resource. This new mission has the potential to generate new sites for long-term stewardship management.

3. DEFINITION OF LONG-TERM STEWARDSHIP

This strategic plan adopts the basic definition of long-term stewardship presented in "A Report to Congress on Long-Term Stewardship" (DOE 2001):

"... long-term stewardship refers to all activities necessary to ensure protection of human health and the environment following completion of remediation, disposal, or stabilization of a site or a portion of a site. Long-term stewardship includes all engineered and institutional controls designed to contain or to prevent exposures to residual contamination and waste, such as surveillance activities, record-keeping activities, inspections, groundwater monitoring, ongoing pump and treat activities, cap repair, maintenance of entombed buildings or facilities, maintenance of other barriers and containment structures, access control, and posting signs."

While this definition is comprehensive enough to address a wide variety of DOE sites, it is not intended to address the specific regulations, agreements, and stakeholder interest unique to each site. Therefore, INEEL's Long-Term Stewardship Program expands the scope of long-term stewardship to address the conservation of ecological and cultural resources and awareness of technology changes in addition to maintenance of remedies.

Many stakeholders and Shoshone-Bannock tribal members asked when long-term stewardship begins. From a lifecycle planning perspective, managers should consider the long-term stewardship

implications of their projects in the planning stages of those projects, with the intent to minimize any long-term management responsibilities or costs that may remain after the project is completed. In addition, remedy decisions are, in effect, long-term stewardship decisions, as the remediation option selected will determine what may remain to be stewarded. Some of the criteria used to evaluate remedy alternatives include long-term effectiveness and long-term cost effectiveness. The role of the Long-Term Stewardship Program during new project planning and remedy selection is to provide lessons learned and other information for consideration during planning. The Long-Term Stewardship Program does not conduct the following processes:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial investigation, feasibility studies, remedy selection, remedial design, or remedial action
- Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) corrective actions, closure processes, or development of post-closure permits
- Ecological and cultural assessments required for remedy feasibility studies and implementation.

Administratively, long-term stewardship begins when a remedy is complete and transferred to the Long-Term Stewardship Program. The Long-Term Stewardship Program considers a remedy complete when the removal action is accomplished, construction of the engineered barrier is complete, or remedial action objectives have been met, or when the remedy has been proven to be operating in a steady-state (such as for groundwater pump-and-treat facilities). This usually occurs after the first CERCLA-mandated five-year review of the remedy for those projects regulated by CERCLA. For other remediation or closure projects (such as those governed by HWMA/RCRA), that transition point will need to be determined. The Long-Term Stewardship Program will develop a transition process to ensure the various programs and regulators agree that a remediated site or facility is ready to “move on” to long-term stewardship.

4. BACKGROUND

The intent of this background section is to describe the process used to develop this document and provide some information about the basis for the scope covered in the plan. This section summarizes some of the major comment areas that could not be reflected within revisions to other sections of the document. As this document will be used by INEEL staff today and in the future to guide management of the Long-Term Stewardship Program, this information may be instructive to those who were not directly involved in its development.

While developing this Long-Term Stewardship Strategic Plan, the INEEL staff spent considerable time first reviewing comments and input already received from stakeholders and tribal members during previous public involvement activities conducted for other projects and programs. For example, the INEEL studied comments in Environmental Impact Statements, reviews of draft CERCLA proposed plans, and from the review of the draft “Long-Term Stewardship Study” produced by DOE-HQ. Those comments, and the comments received from stakeholders, the Shoshone-Bannock Tribes, and INEEL personnel during the public review of the draft “INEEL Long-Term Stewardship Strategic Overview” are reflected in this long-term stewardship strategic plan. Many comments emphasized the need to:

- Institutionalize an INEEL Long-Term Stewardship Program within the INEEL organization
- Ensure a corporate and government focus on a defined long-term stewardship vision and mission
- Ensure continued, protected funding for long-term stewardship activities.

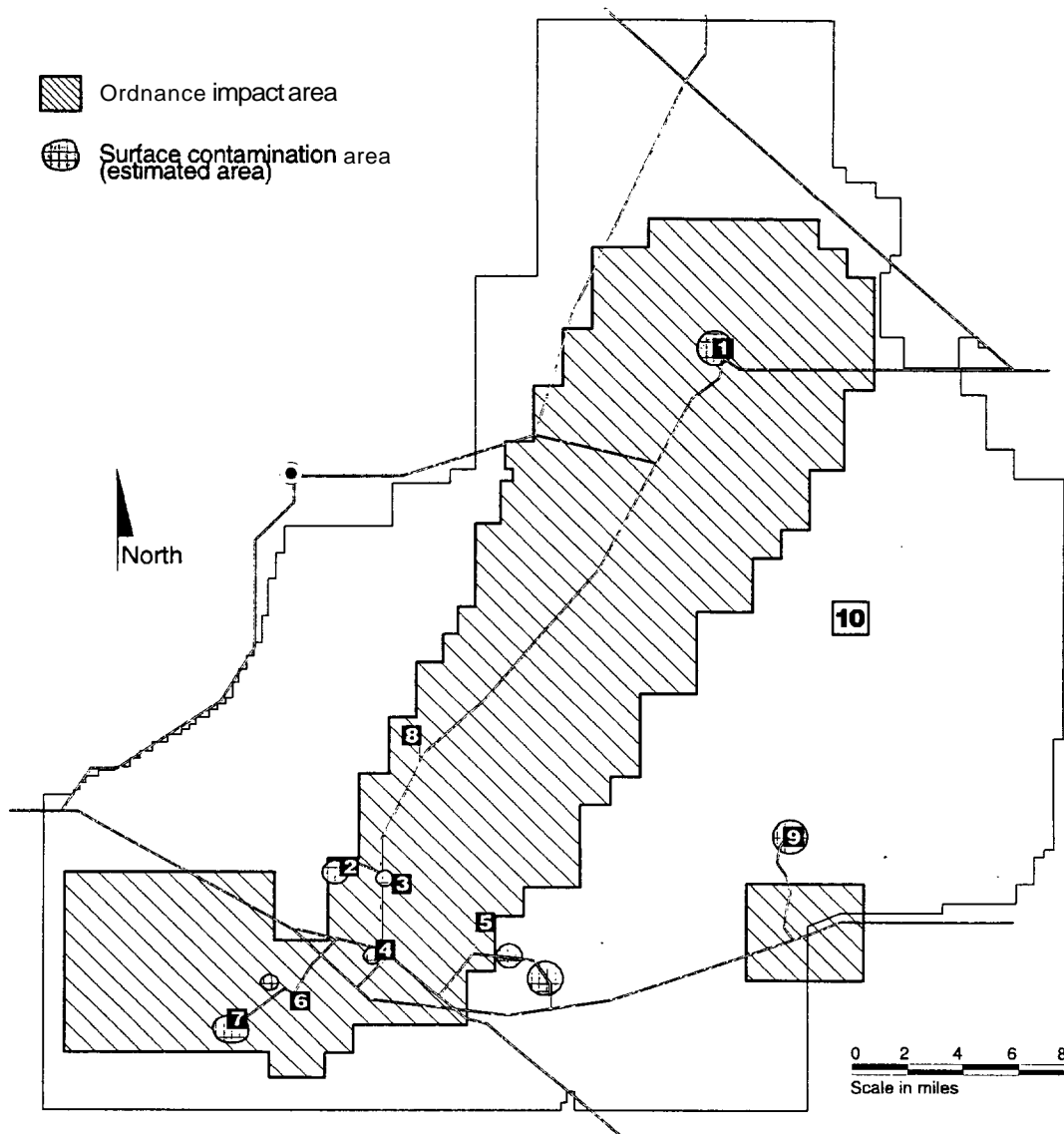
In early 2002, INEEL consulted with other DOE sites undergoing long-term stewardship, and solicited ideas from members of the Shoshone-Bannock Tribes, the INEEL Citizens Advisory Board, federal and state agencies, regulatory organizations, environmental advocacy groups, a local Resource Conservation and Development Council, local municipal governments, INEEL employees, and the general public about proposed vision and mission statements, and implementing goals and objectives that formed the basis for this INEEL Long-Term Stewardship Strategic Plan. From this input, INEEL developed a draft Strategic Plan that went out for public comment in August 2002. The experience and suggestions from the other DOE sites undergoing long-term stewardship are also reflected in the Strategic Plan.

By asking stakeholders for input during strategic program formulation, the INEEL provided an early opportunity for members of the communities, agencies, and tribal governments most affected by long-term stewardship at the INEEL to influence the structure of the INEEL Long-Term Stewardship Program. For ease of communication throughout this plan, these groups will hereafter be referred to as stakeholders and members of the Shoshone-Bannock Tribes.

Many who provided input suggested that protection of human health and the environment includes the cultural, historical, and natural resources that exist within the areas of residual contamination or areas that may be disturbed by ongoing or new activities and programs at the INEEL. Others cited the importance of including reviews and appropriate incorporation of new regulations and technologies as a means to better manage long-term stewardship. Therefore, the INEEL expanded on the DOE-HQ long-term stewardship mission to maintain remedies, by including the concepts of ecosystem conservation and protection of cultural/historical resources, and responding to regulatory and technological changes.

Several commenters suggested that the DOE-HQ August 2002 announcement to change INEEL's landlord responsibility from the Office of Environmental Management (EM) to the Office of Nuclear Energy (NE) may impact long-term stewardship responsibilities because the program was developed and proposed under EM. DOE's current policy assigns responsibility for long-term stewardship activities to the site landlord. INEEL's view is that long-term stewardship responsibilities, obligations, and activities will continue regardless of which DOE office is assigned management responsibilities for long-term stewardship. While the complete transition of INEEL landlord responsibilities from EM to NE is not expected until January 2003, ongoing discussions between EM and NE include identification of financial and management responsibilities for all long-term stewardship activities at the INEEL.

A few commenters suggested that a brief summary of the extent of contamination and applicable regulatory agreements might be helpful for the reader to understand the potential scope of long-term stewardship. Past generation, treatment, storage, and disposal of radioactive waste, hazardous waste, and mixed waste from INEEL, and other DOE sites such as Rocky Flats, have contaminated structures, surrounding soils, and groundwater at the INEEL. Figure 1 (DOE 2001) shows the general locations for the majority of remaining surface contamination at INEEL. These locations are called waste area groups (WAGs). Each of INEEL's ten waste area groups depicted in Figure 1 contain a number of contaminant release sites grouped into operable units based on similarity of waste streams and geographical boundaries. The health effects and longevity of the risks presented by these contaminants vary greatly depending on the physical and chemical form and concentration of the contaminant, exposure pathway, and the duration of exposure. Remediation project staff perform human health and ecological risk assessments during the release site characterization process and specific information about the nature and hazard of the respective contaminants at each operable unit can be found in the CERCLA documentation related to the specific waste area groups. This information is available online at the electronic Administrative Record (<http://ar.inel.nov/>).



Legend to INEEL facilities (WAGs)

- | | |
|---|--|
| 1. Test Area North | 6. Experimental Breeder Reactor-1/
Boiling Water Reactor Experiment |
| 2. Test Reactor Area | 7. Radioactive Waste
Management Complex |
| 3. Idaho Nuclear Technology and
Engineering Center | 8. Naval Reactors Facility |
| 4. Central
Facilities Area | 9. Argonne National
Laboratory-West |
| 5. Power Burst Facility/
Auxiliary Reactor Area | 10. Snake River Plain Aquifer
and Miscellaneous Sites |

Figure 1. Map of the TNEEL Site showing location of major facilities and surface contaminated areas

Those who reviewed the DOE-HQ Long-Term Stewardship Strategic Plan and INEEL's Long-Term Stewardship Strategic Plan were concerned about the stylistic differences between the two draft plans. A number of factors, including the timing of development, the purpose for, and the expected audience of the plan influenced the structure, content, and presentation of the draft strategies. Although the two plans do present different formats and structures, INEEL and DOE-HQ are continuing to work together to ensure that they are substantively consistent. For example, both respective vision statements address the need to reuse the land safely, and mission statements share the core concept of protecting human health and the environment from residual contamination. The strategic goals of the two plans are also essentially consistent, but are organized differently.

Nationally, stakeholders are concerned about what becomes of DOE land after the DOE finishes its remediation mission. Local stakeholders and members of the Shoshone-Bannock Tribes expressed similar concerns about the INEEL. Because DOE has continued plans for using the INEEL as a national multipurpose laboratory, DOE intends to retain management of the INEEL lands as currently configured following completion of remediation. The INEEL lands were acquired through a combination of Public Land Orders (PLO-318, PLO-545, PLO-637, PLO-I770) and purchases, specifically to support the mission of the DOE. The withdrawal of these lands from the public domain for DOE's use has no time limitation or expiration and authority for such use is currently expected to remain with DOE. Any decisions about changing the land ownership would have to be made through the established regulations and process for federal land transfer, which includes consultation with the Shoshone-Bannock Tribes concerning treaty rights, and prior notification to potential land recipients of all areas where hazardous substances were stored, released, or disposed of pursuant to existing regulations.

Regarding DOE's continuing trust relationship with the Shoshone-Bannock Tribes of the Fort Hall Reservation, DOE has an Agreement In Principle with the Tribes (DOE 2000). The Agreement In Principle establishes the protocols and expectations for interacting with the Shoshone-Bannock Tribes about the INEEL. DOE will continue to abide by that agreement when making land ownership decisions for the INEEL.

Finally, some stakeholders expressed a desire to understand the consistency and integration between this strategic plan and other documents that describe INEEL land use, ongoing and proposed programs, infrastructure, remediation approaches, regulatory obligations, and accelerated cleanup. The primary intent of strategic goal # 1 is to understand the full scope and implications of INEEL's long-term stewardship responsibilities. This understanding extends to clearly identifying the purpose and scope of these other documents, and ensuring that any overlaps or gaps in them are addressed. This task will be further defined in the implementation plan.

5. OUR COMMITMENT TO INSTITUTIONALIZE LONG-TERM STEWARDSHIP AT THE INEEL

The INEEL is actively conducting early planning and development activities for its Long-Term Stewardship Program. The following examples demonstrate this commitment:

- The INEEL established the Environmental Stewardship Initiative as one of five laboratory initiatives to increase knowledge of fate and transport mechanisms, improve predictive capabilities, and develop more cost-effective methods for long-term monitoring and surveillance (TNEEL 2002).
- The INEEL identified discrete INEEL Long-Term Stewardship Program development tasks in Fiscal Year 2001 that included preliminary scope, schedule, and budget that would lead to an INEEL Project Baseline Summary submittal by October 1, 2004.

- The INEEL provided an early opportunity for stakeholders and the Shoshone-Bannock tribal members to influence the development of this MEEL Long-Term Stewardship Strategic Plan. INEEL will also provide similar involvement opportunities during the development of the INEEL Long-Term Stewardship Implementation Plan.

6. INEEL LONG-TERM STEWARDSHIP VISION AND MISSION

6.1 Vision

The vision for the INEEL Long-Term Stewardship Program is the safe and informed use of the INEEL by multiple generations following remediation.

6.2 Mission

The mission of the INEEL Long-Term Stewardship Program is to ensure the safe and informed use of INEEL facilities and land following remediation through decisions and actions that:

- Protect human health and the environment from residual contamination
- Conserve ecological and cultural resources
- Respond to regulatory, political, and technological changes.

This program mission includes protection of workers, the public, and the environment from residual contamination via engineered barriers, continued remedy implementation, institutional controls, media specific monitoring, and access control. Monitoring includes the INEEL boundary or beyond as necessary to encompass real or potential threats to human health and the environment (DOE-ID 1991).

While several areas at the INEEL have undergone remedial action pursuant to agreements between the DOE, State of Idaho, and the EPA, these areas will still be subject to institutional controls and limited access for approximately 100 years. Yet, planning land ownership for periods in excess of 100 years is highly uncertain. DOE recognizes that over time, Congress, DOE, or the public may propose new uses for facilities or land at the INEEL. Before INEEL takes action to pursue new land ownership, DOE will identify specific facility and land-use impacts and consult with stakeholders and members of the Shoshone-Bannock tribal governments to ensure they consider stakeholder concerns and tribal rights in their final decisions. Regardless of future land-use decisions, the federal government has a legal obligation to maintain control and limit access to those areas that continue to pose a significant risk to human health and the environment. In addition, the government has the responsibility to maintain records of past actions so that future generations will be able to understand the risk posed by the controlled areas and why use of or access to them is managed so carefully.

This Long-Term Stewardship Program mission also includes conserving ecological and cultural resources at the INEEL. **As** stewards of federal lands, DOE will consult with stakeholders and members of the Shoshone-Bannock Tribes to manage the natural and cultural resources at INEEL consistent with the principles of ecosystem management and resource protection and with applicable federal laws regulations, policies, and executive orders.

Finally, this Long-Term Stewardship Program mission includes the evaluation and response to regulatory, political, and technological changes. Specifically, the INEEL will evaluate new or revised policies, missions, regulations, statutes, regulatory agreements, records of decisions, and post-closure permits, to identify any necessary changes to our stewardship approach. The INEEL will also review

other requirements such as agreements with third parties (e.g., land ownership or access agreements) for consistency with stewardship objectives. By evaluating new or improved technologies, the INEEL may also identify opportunities to enhance long-term stewardship operations by reducing risk, improving reliability of monitoring or other equipment, or reducing cost.

7. GOALS AND IMPLEMENTING OBJECTIVES FOR LONG-TERM STEWARDSHIP AT THE INEEL

The implementing objectives associated with each goal listed below include a brief description of example activities that the INEEL Long-Term Stewardship Program will perform to implement each objective. They are not all-inclusive or static in nature. As the Long-Term Stewardship Program refines its planning for long-term stewardship activities, INEEL may decide to revisit the goals and objectives.

7.1 Goal # 1: Understand the full scope and implications of INEEL's long-term stewardship responsibilities

7.1.1 Strategic Objective 1.1

Develop an integrated approach to identify and comply with applicable laws and regulations, legal agreements, policies, orders, and INEEL procedures, that drive the conduct of long-term stewardship activities.

The primary focus of this activity is to ensure that the INEEL Long-Term Stewardship Program is complying with all relevant requirements. Because of the diversity of regulatory requirements governing the sites transitioning into the Long-Term Stewardship Program, (e.g., the Federal Facility Agreement and Consent Order (DOE-ID 1991), CERCLA Records of Decisions, and HWMA/RCRA post-closure permits) the Long-Term Stewardship Program must have a comprehensive understanding of how these requirements must be applied and how they can be coordinated most effectively. Other national statutes that may have direct impact on long-term stewardship at the INEEL include the National Historic Preservation Act, the Archaeological Resources Protection Act, the Endangered Species Act, and the National Environmental Policy Act. This approach will always be conducted to ensure that INEEL is compliant with all new requirements and regulations as well as those already on the books.

7.1.2 Strategic Objective 1.2

Develop a comprehensive approach to identify and manage the contamination left in place after remediation at the INEEL.

The Long-Term Stewardship Program recognizes that a more integrated and better-coordinated approach to conducting these activities may be necessary. The primary focus of this objective is to ensure the Long-Term Stewardship Program knows the locations of all residual contamination and understands the activities necessary to manage them.

Such information may be found in:

- GIS-linked maps and databases used to identify the location and type of contamination remaining on the INEEL site under long-term stewardship responsibility
- Institutional control plans to control access to contaminated areas

- Monitoring plans that identify the contaminants, locations, and sampling schedule for monitoring soil, air, and groundwater.

7.1.3 Strategic Objectives 1.3

Develop an integrated approach to identify and manage the ecological and cultural resources occurring on the INEEL.

Decades worth of ecological monitoring and research data exist in various files and databases across the INEEL. The Long-Term Stewardship Program will need to integrate that existing information and develop a more coordinated system to manage these resources with less money and effort. Protection of the environment **is** a requirement for long-term stewardship sites and protection of human populations from exposure does not necessarily demonstrate that the ecological resources are protected. The Long-Term Stewardship Program will protect ecological resources at the INEEL by maintaining the diverse complement of native vegetation, keeping perturbation of undisturbed areas to a minimum, and considering and mitigating, as necessary, the impacts of DOE actions on local fauna. Conservation management in this area includes preservation of the Sagebrush Steppe Reserve as an undisturbed sagebrush ecosystem and studies of biotic receptors (plants or animals) that may act as early indicators of breaches in remedy integrity. **It** also includes continuation of studies **by** TNEEL as one of DOE’s National Environmental Research Parks. These parks are outdoor laboratories within the six major ecoregions of the United States that provide opportunities for environmental studies on protected lands. Studies also evaluate the environmental consequences of energy use and development, develop strategies to mitigate effects, and demonstrate possible land-use options.

The program mission protects cultural resources by identifying, protecting, and managing “historic properties” as defined in the National Historic Preservation Act, “archaeological resources” as defined in the Archaeological Resources Protection Act, and “cultural items” **as** defined in the Native American Graves Protection and Repatriation Act. Such protection may include securing information about their location or designing mitigative measures where the resources may be impacted by DOE activities.

7.2 Goal #2: Maintain acceptable levels of risk established by remedies

7.2.1 Strategic Objective 2.1

Maintain remedies as required in plans and agreements to ensure continued protectiveness of these remedies.

This objective focuses on maintaining ‘the integrity of engineered barriers, continued monitoring and surveillance, continued operation of pump-and-treat facilities, and implementation of institutional controls. Activities will also include specified, periodic reviews of remedy performance and implementation of corrective actions in the case of remedy degradation.

7.2.2 Strategic Objective 2.2

*Develop **or** revise procedures **for** implementing emergency response to failures of remedies or long-term stewardship institutional controls.*

A program of regular surveillance and maintenance of a remedy should identify and correct routine degradations in that remedy’s integrity, as well as provide opportunities for making improvements in the maintenance process itself. But the INEEL recognizes that nonroutine events, such as severe wildland

fires, can occur. It is imperative that the INEEL be able to immediately and safely respond to such nonroutine events and take action to prevent any failures in the remedies. Therefore, the focus of this objective is to ensure that long-term stewardship considerations are part of the INEEL's overall emergency response planning and procedures.

7.3 Goal #3: Sustain knowledge of residual contamination in a manner that retains the relevance, accessibility, and integrity of the information for stewards, decision-makers, and affected parties

7.3.1 Strategic Objective 3.1

Develop a comprehensive system to identify and manage the data and information essential for the implementation of long-term stewardship.

The MEEL manages a vast amount of data and information, not all of which may be related to long-term stewardship. It is cost-prohibitive to maintain all this information forever. The challenge lies in identifying and managing only that information necessary for conducting long-term stewardship and ensuring it can be maintained as long as necessary, without compromising the quality and credibility of the data. As information management technologies develop or improve it will be necessary to upgrade existing systems and software, maintain capability to read and understand archived data, and migrate data and new information to new systems.

7.3.2 Strategic Objective 3.2

Develop an approach to provide access to long-term stewardship information for stakeholders and members of the Shoshone-Bannock Tribes.

It is important to INEEL that the Long-Term Stewardship Program has credibility with the public. One way to ensure this credibility is to provide access to stewardship information such as sampling and monitoring results, historical data, and locations of contamination. By providing access, the public can be confident that MEEL is carrying out its long-term stewardship responsibilities. Modes of access will need to consider stakeholder and tribal communication needs, styles, and capabilities. In addition, the type of long-term stewardship information and applicable security requirements will affect the accessibility to information.

7.4 Goal #4: Support stakeholder and Shoshone-Bannock Tribal understanding of and involvement in long-term stewardship

7.4.1 Strategic Objective 4.1

Identify the appropriate levels of stakeholder and tribal involvement in INEEL long-term stewardship decisions and actions.

Different levels of public involvement (e.g., informing, consulting, involving, or collaborating) may be more appropriate for different long-term stewardship activities (INEEL 2001). Additionally, different stakeholders may need to become involved in different ways for any given long-term stewardship activity. For example, regulators may need to become more involved than other stakeholders in reviewing monitoring data. For each activity, the INEEL will work with stakeholders and members of

the Shoshone-Bannock Tribes to determine the level of involvement in long-term stewardship planning, implementation, and evaluation.

7.4.2 Strategic Objective 4.2

*Maintain close relationships and communication with programs, agencies, stakeholders, and members of the Shoshone-Bannock Tribes to ensure that **DOE** consistently understands and considers all long-term stewardship issues and concerns.*

While it is important that stakeholders and members of the Shoshone-Bannock Tribes understand why and how the INEEL will conduct long-term stewardship, it is equally important that the INEEL understand stakeholder and tribal concerns and interests as the Long-Term Stewardship Program operates. By asking the stakeholders and tribal members for input through public comments, surveys, facilitated discussions, and open meetings, the Long-Term Stewardship Program can maintain a connection with evolving stakeholder and tribal interests and values. As the INEEL moves into the future, the characteristics of the communities around the site are likely to change. It is important that the Long-Term Stewardship Program remain connected to these communities and aware of the changes in such things as population growth and development, transportation corridor changes, and other factors that may impact or be impacted by the INEEL. Additionally, the communities, stakeholders, and tribes are resources for knowledge and perspectives that may assist the INEEL in carrying out long-term stewardship responsibilities. The INEEL will also conduct formal communication with the Shoshone-Bannock Tribes of the Fort Hall Reservation in accordance with the Agreement in Principle.

7.5 Goal #5: Incorporate long-term stewardship into the INEEL's decision-making processes

7.5.1 Strategic Objective 5.1

Evaluate and revise, as necessary, existing INEEL policies and procedures to ensure consistent integration of long-term stewardship considerations in site decisions.

Policies are the highest level of direction, and set the overarching expectations for how work is performed. Directives, procedures, and guidance flow from policies, and describe specifically how those expectations should or could be met. By reviewing and, if necessary, revising existing and future policies and procedures, the Long-Term Stewardship Program can help ensure that investigation and analyses of potential remedies include the feasibility, cost, and effectiveness for conducting long-term stewardship of the selected remedy. The Long-Term Stewardship Program can also ensure that new INEEL programs and projects consider the implications for long-term stewardship resulting from the new activity.

7.5.2 Strategic Objective 5.2

Incorporate long-term stewardship considerations into budget and work planning guidance documents.

Incorporation of long-term stewardship considerations into work planning guidance ensures that each responsible program or project manager identifies the costs, scope, and schedule for the transition of any post-remediation or post-closure responsibilities to the Long-Term Stewardship Program. These costs can include items such as identification and disposition of essential long-term stewardship information, preparation and consolidation of project records that document contaminant characterization and location, ongoing commitments for institutional controls and monitoring, and the cost and schedule for regular maintenance of engineered barriers.

7.6 Goal #6: Sustain the ability to conduct long-term stewardship activities

7.6.1 Strategic Objective 6.1

Identify, acquire, and manage the economic, physical, and human resources necessary to conduct long-term stewardship of the INEEL.

The INEEL will identify the resources, (including financial, facilities and hardware, and technical expertise) accountabilities, and authorities necessary to plan and implement all long-term stewardship activities at the INEEL. Of particular importance is the need to provide adequate and sustained funding for long-term stewardship to support compliance obligations and credibility with stakeholders and members of the Shoshone-Bannock Tribes. It is also critical to ensure that personnel have the necessary skills, knowledge, and technologies (systems and machines) to conduct long-term stewardship work. Over time, personnel with significant long-term stewardship experience will retire or leave. The MEEL plans to train remaining personnel, or acquire new personnel, to ensure an uninterrupted supply of staff members with skills and abilities necessary for long-term stewardship to succeed.

7.7 Goal #7: Reduce uncertainty and cost related to long-term stewardship activities

7.7.1 Strategic Objective 7.1

Identify and implement lessons learned ~~for~~ continued improvement of long-term stewardship activities,

The INEEL's role as steward includes stewardship of taxpayer dollars. INEEL will always face the challenge of reducing the costs of conducting long-term stewardship activities without compromising the protectiveness of the remedies. Other sites in long-term stewardship within the DOE Complex as well as other federal agencies (e.g., Department of Defense) conducting long-term stewardship activities represent a significant source of experience upon which the MEEL Long-Term Stewardship Program can draw to improve long-term stewardship implementation. This objective focuses on looking internally and externally to identify ways to reduce those costs and increase the efficiency of stewardship operations through activities such as, reducing the administrative costs for managing the Long-Term Stewardship Program, reducing the costs of maintaining remedies by improving maintenance operations, improving the coordination of sampling activities, streamlining information management, and reflecting remedy experience back to those who perform investigations for remedy selection.

7.7.2 Strategic Objective 7.2

Identify and implement new technologies and communicate technology needs to researchers ~~for~~ further improvement or development.

A significant element in reducing long-term stewardship costs will come from advancements in the fields of science and technology related to such things as materials engineering, remote sensors, computing technology, and geochemistry. In some cases, a new treatment technology may make retrieval and treatment more cost effective than ongoing long-term care and thus alleviate the need for a site to remain under long-term stewardship care. The Long-Term Stewardship Program will continually work to identify where new developments could be applied to long-term stewardship activities, or where

advancements are desired. This objective focuses on the process of maintaining awareness of both the state of the **act** and the state of the need in long-term stewardship science and technologies.

7.7.3 Strategic Objective 7.3

Develop a process for transitioning sites out of long-term stewardship.

While some residually contaminated sites on the INEEL will be in long-term stewardship for perpetuity, many others will require stewardship for only a limited time. Over time, the risk at some sites with residual contamination will decline to levels that are conducive to unrestricted use and long-term stewardship will no longer be necessary. Requirements for ending the stewardship of sites that were remediated under the authority of CERCLA already exist. However, the Long-Term Stewardship Program must develop a comprehensive long-term stewardship exit process that meets those and other regulated “exit” or “ramp down” requirements.

8. FUTURE STEPS IN INEEL LONG-TERM STEWARDSHIP PROGRAM DEVELOPMENT

INEEL management will use this plan to structure and institutionalize the Long-Term Stewardship Program within the established organizational structure for the TNEEL. This plan embodies our response to the identified stakeholder desires to institutionalize, focus, and protect long-term stewardship at the INEEL. Focus on long-term stewardship will be maintained by housing the work within the formal INEEL Long-Term Stewardship Program. The INEEL will obtain funding for the Long-Term Stewardship Program through established mechanisms for federal program management.

Concurrent with program budget development is completion of this strategic plan in Fiscal Year 2002 and development of the INEEL Long-Term Stewardship Implementation Plan in Fiscal Year 2003. The INEEL Long-Term Stewardship Implementation Plan identifies the discrete program activities, schedules, and performance measures for implementation in the three to five-year timeframe. The INEEL Long-Term Stewardship Strategic Plan combined with the INEEL Long-Term Stewardship Implementation Plan constitutes the INEEL Long-Term Stewardship Plan.

As the INEEL accelerates the completion of the Environmental Management organization’s mission to remediate DOE-EM sites, thus reducing the overall risk, so will the transition of sites into long-term stewardship accelerate. The Long-Term Stewardship Program must be prepared to receive those sites without compromising safety of the workers, the public, or the environment. Starting with a solid strategic foundation is critical to progressing to a smooth and focused programmatic operation, particularly for an unusually long-lived program such as long-term stewardship. This program, however, must also be flexible enough to respond with adjustments as required in the future. Given the long time frames and the types of risk issues that long-term stewardship must address, uncertainty is inevitably an important issue in the decision-making process. As the program gains experience, INEEL may revise this strategic plan to reflect the new experience.

9. REFERENCES

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