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United States Government **Department of Energy**

memorandum

DATE: August 29, 2002

REPLY TO ATTN OF: EM-51 (Geiser, 6- 8324)

SUBJECT: Long-term Stewardship Planning Guidance for Closure Sites

TO: Distribution

This memorandum directs the preparation of long term stewardship plans for four closure sites: Fernald, Weldon Spring, Mound, and Rocky Flats. Guidance for this effort, *Long-term Stewardship Planning Guidance for the Closure Sites* (Attachment A) is designed to ensure the Department has adequately planned for our long-term stewardship responsibility. The guidance is consistent with the draft *Site Transition Framework* (Attachment B), which I intend to use as a tool to ensure the timely and smooth transition of sites into long-term stewardship. This guidance incorporates recommendations from stakeholders and national intergovernmental groups regarding long term-stewardship planning.

As planning is conducted, I expect site management to raise issues regarding closure and long-term stewardship to Headquarters for policy direction or guidance. We are currently working on guidance for the retention and disposition of records and the use of institutional controls as a component of environmental remedies. Plans should be prepared with input from stakeholders and regulators and submitted to me no later than January 31, 2003. As sites near their closure dates, the long-term stewardship plans should be periodically revised to reflect updated information. If you have any questions, please contact me or Mr. David Geiser, at (202) 586-8324.

Jessie Hill Roberson
Assistant Secretary for
Environmental Management

Attachments

Distribution:

Jack R. Craig, Deputy Manager, Ohio Field Office (OH)
Eugene Schmitt, Manager, Rocky Flats Field Office (RF)
Gerald Boyd, Assistant Manager for Environmental Management,
Oak Ridge Operations Office (OR)

cc:
Steve McCracken, Site Manager, Fernald
Rick Provencher, Site Manager, Mound
Pam Thompson, Site Manager, Weldon Spring

U.S. Department of Energy

Long-term Stewardship Planning Guidance for Closure Sites

August 2002

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Part I – The Rationale and Framework for Planning Long-Term Stewardship

Long-Term Stewardship Planning Supports Accelerated Cleanup at the Closure Sites

During the past decade, the Department of Energy (DOE) has made significant progress in addressing the environmental legacy of the Cold War. At many sites, it has reduced the risks and costs associated with maintaining protective conditions across the DOE complex. However, in spite of that effort, the majority of DOE sites will not be cleaned up to the point where they can be released for unrestricted use[1]. Factors such as technical infeasibility, excessive worker risk or environmental damage, programmatic priorities, and costs dictate the extent to which sites are undergoing remediation and the consequent end-states achieved. When cleanup is completed, most DOE sites will require some level of long-term stewardship (LTS) to ensure protection of human health and the environment from hazards that remain after the cleanup is complete.[2]

Developing LTS plans will improve the long-term management of risks remaining after cleanup is completed. The goals of this LTS planning guidance are to:

- focus management on post-closure requirements before cleanup is complete;
- facilitate development of a baseline scope, schedule and cost for LTS;
- facilitate transition of sites and LTS responsibilities; and
- provide a mechanism to ensure the continued protectiveness of environmental remedies.

To ensure that the long-term institutional management of residual hazards at DOE sites is conducted efficiently and cost-effectively, it is necessary to integrate LTS concepts with current site planning. The Department's goal of this integration is to ensure that LTS is incorporated into the Department's business practices so that LTS becomes a "culture" and is carried out as routinely as other site activities. It is important to do this sooner rather than later because decisions involving cleanup, operations, construction or decontamination and decommissioning impact the Department's LTS responsibility.

The Department's efforts to accelerate closure of sites[3] places a greater emphasis on working with affected governmental organizations, stakeholders and Tribal Nations to ensure that an adequate plan is in place prior to completion of the cleanup. The planning effort will improve our understanding of the LTS scope and establish the infrastructure requirements needed to manage the program.

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[1] Unrestricted use generally means that conditions are safe for any exposure scenario, including residential use, subsistence farming, and subsistence fishing. However, it does not necessarily imply cleanup to pristine or background conditions.

[2] For the purposes of this guidance, "cleanup" refers to the process of addressing contaminated land, waters, facilities, and materials in accordance with applicable requirements. This refers not only to actions taken under CERCLA and RCRA, but also to the decontamination and decommissioning process and the low-level waste or other radioactive waste land disposal process. Cleanup does not imply that all hazards will be removed from the site. The term "remediation" is often used synonymously with cleanup. Cleanup/remediation is considered complete when deactivation or decommissioning of all facilities is complete, excluding long-term surveillance and monitoring; releases to the environment have been cleaned up in accordance with agreed upon standards; groundwater contamination has been contained, or long-term treatment or monitoring is in place; nuclear materials and spent fuel have been stabilized and/or placed in safe long-term storage; and "legacy" wastes (i.e., produced by past nuclear weapons production activities, with the exception of high-level waste) have been disposed of in an approved manner. *From Cleanup to Stewardship*, a Companion Report to *Accelerating Cleanup: Paths to Closure* and Background Information to Support the Scoping Process Required for the 1990 PEIS Settlement Study, U.S. Department of Energy, Office of Environmental Management, October 1999, [DOE/EM-0466].

[3] Site closure is defined as follows: *Site closure is the point at which the following objectives are met and verified for EM activities: (1) Environmental remediation is complete per regulatory requirements; (2) Waste management activities have ceased and material dispositioned; (3) Real property is removed, disposed, or transferred; (4) Personal property is removed, disposed or transferred; (5) Long-term stewardship plans are developed and approved; (6) Contracts are terminated or transferred; and (7) Workforce is terminated or transferred.*

The closure sites' LTS plans should be built using the Department's seven principles and with input from affected governmental organizations, stakeholders, and Tribal Nations. The plans should be developed prior to site closure with emphasis on allowing adequate up-front planning and involvement by all interested parties prior to entering LTS. These plans should be updated periodically to reflect significant changes in the site's stewardship approach and be finalized and approved by the appropriate authorities including DOE management, regulators, and others as needed.

This Guidance Package Provides a Consistent Framework for Closure Site LTS Plans

The primary objective of this guidance is to support site efforts to develop LTS plans that address post-closure requirements and activities. Each site plan will be unique. The plans will vary based on site-specific conditions, local community, stakeholder, government, and Tribal Nation concerns, and requirements resulting from the site end state. This guidance provides the framework and minimum requirements for a LTS Plan. It is consistent with the draft Site Transition Framework and should be used as a starting template to construct a site-specific plan. The guidance is designed to formulate a baseline that can be used to communicate information to future stewards, and provide the basis for stewardship costs. It is anticipated that more detailed information will be found in other documents and will be referenced in the LTS Plan.

> Long-term stewardship refers to all activities necessary to ensure protection of human health and the environment following completion of cleanup, disposal, or stabilization at a site or portion of 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 contained structures, access control, and posting signs. Reference: *A Report to Congress on Long-term Stewardship* (DOE 2001)

The Department's Draft Strategic Plan for Long-term Stewardship provides a corporate perspective for Site Planning[4]

The Department released the second draft of its long term stewardship strategic plan in July 2002. The mission, vision, goals, and principles provided below are drawn from that draft document.

Mission: To protect human health and the environment from risks that remain following cleanup.

Vision: Environmental and public health liabilities are reduced and land is returned to beneficial use consistent with the Department's mission requirements. This long-term stewardship vision will be demonstrated when:

> the effects of residual contamination are minimized by effective monitoring and maintenance measures; the Department has achieved public trust through cooperative partnerships with stakeholders, state, local and Tribal governments; long term stewardship principles are fully integrated into the Department's planning and operations; and, the vitality of human, natural and cultural resources for current and future generations is sustained.

Goals:

Goal 1. *Post-remediation responsibility and liability is effectively managed.* This goal recognizes that the Department is already conducting long-term stewardship at many sites across the Nation and focuses on supporting the continued execution of these responsibilities.

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[4]The Mission, Vison and Goals of the LTS Program are from the LTS Strategic Plan (Draft, Dated July, 2002).

Goal 2. *Long-term Stewardship responsiblities are understood and built into the way the Department does business.* This second goal ties the success of the Department's long-term stewardship effort to its ability to improve existing planning and management processes.

Goal 3. *The capability and tools are in place to ensure the effectiveness of long-term stewardship for current and future generations.* This goal articulates the Department's intergenerational approach to ensuring the continuing protectiveness of environmental remedies, assuring the availability of adequate resources, and utilizing developments in information management and advances in science and technology. Understanding of the continuing and iterative nature of ong-term stewardship and the promotion of the Department's partnerships with State. local and Tribal governments and stakeholders. is fundamental to the success of this effort.

Principles:

1) *Long-term Stewardship is a Department-wide responsibility.*
As a whole, the Department is committed to the protection of human health and the environment in all of its actions. To ensure success, all Departmental elements must consider long-term stewardship as an integral part of the Department's mission.

2) *Long-term Stewardship is a component of all aspects of Departmental decision making.*
It is the responsibility of sites and Headquarters offices to ensure that long-term stewardship is considered in each decision that impacts DOE cleanup. This responsibility extends from the identification of remediation alternatives, remedial design, construction, operation and through all relevant decisions made over the lifetime of the hazards.

3) *The Department is a Trustee of natural and cultural resources.*
Residual hazards should be managed within the larger context of Federal land management, which includes trusteeship for ecologically and culturally important areas. The Department will manage these hazards in accordance with applicable regulatory requirements.

4) *Long-term Stewardship should be incorporated into relevant Departmental policies, practices and systems.*
Long-term stewardship will be most effective when integrated into existing Departmental processes and management systems. As these DOE policies, practices, and systems (such as Life Cycle Asset Management, Integrated Safety Management and Environmental Management Systems) are reviewed and/or implemented, a broad range of long-term stewardship activities and needs may be incorporated. This will facilitate the establishment of long-term stewardship as an essential element of all facets of Departmental missions.

5) *An inter-generational approach is needed for Long-term Stewardship.*
Long-term stewardship is an enduring commitment by the Federal Government. Due to the longevity of hazards, the ramifications and costs of current and future decisions and missions will be experienced by generations to come. As these generations' land use practices and local community structures change over time, current assumptions that guide Departmental policy may require reevaluation and modification.

6) *Long-term Stewardship policy must provide a consistent framework and acknowledge sites' need for flexibility.*
Although a consistent framework for long-term stewardship is required for complex-wide management, Headquarters and sites must be responsive to site-specific requirements (local, Tribal, state, regional, and federal). Therefore, Departmental long-term stewardship policy must be sufficiently flexible to enable sites to perform necessary long-term stewardship functions within their individual regulatory frameworks and communities.

7) *The involvement of stakeholders and state, local, and Tribal governments is critical to Long-term Stewardship.*

The Department has the responsibility to consult with these affected parties on long-term stewardship issues. Ongoing interaction and exchange increase public awareness. In turn, heightened public awareness facilitates informed decision-making and increases the likelihood of successful implementation of long-term stewardship.

Part II – Relevant Topics to be Addressed in an LTS Plan

Introduction

The critical elements that should be addressed in the long-term stewardship plan are identified and described below. The remaining sections of this guidance provide a template for organizing and addressing those long-term stewardship elements and suggests identifying each specific major element by section number (e.g., 4.0 engineered controls). However, as this LTS planning guidance is intended to assist site personnel in organizing their site-specific LTS plan, it may be appropriate for site personnel to use an alternate organization structure for addressing the key LTS requirements at the site. Alternate plan organization is acceptable as long as the major long-term stewardship elements as identified in this guidance are addressed adequately. The LTS Plan is intended to serve as an overall guidance document for stewardship activities at the specific site. More detailed information may be contained in other documents and referenced in the LTS Plan.

1.0 Purpose and Scope of the LTS Site-Specific Plan

Include a brief statement of why LTS is required at the site and discuss how the plan will be used to implement LTS activities. In addition to addressing the general reasons for LTS at the site (i.e., residual hazards will remain at the site, there are potential receptors to the residual hazards, and, therefore long-term stewardship is necessary at the site to manage the residual hazards), state the purpose and scope of the LTS plan itself. The intent is to clearly define the boundaries to which the plan applies, the breadth of activities it encompasses, the performance objectives for the activities it specifies, roles and responsibilities, and the process for changing either the plan itself or the activities within the plan. The latter are needed so that future stewards can continually compare performance with objectives and stakeholders can see how their concerns have been addressed. As necessary, clearly define key terms that will be used throughout your plan as they relate to the site, (e.g., terms such as "long-term stewardship," "institutional controls"). Specific topics to be addressed in describing the purpose and scope of the plan are provided in the following sections.

1.1 Objectives of the LTS Plan

State the objectives of the LTS plan, and of LTS activities that will be performed at the site. Stewardship may have several objectives, and these should be clearly stated.

1.2 Scope of LTS at the Site

Provide general information about the scope of LTS at the site. The scope includes the physical attributes of the site that will require LTS (e.g., parcels or portions) and the LTS activities required to ensure institutional control of the site. Examples of LTS activities may include but not limited to the following: inspect, maintain, and repair engineered containment systems; monitor wells and other as-built features; conduct emergency response; maintain security; monitor environmental indicators; provide reports; and perform information management tasks. Each key component of the LTS activities and each portion of the site addressed in the plan should be identified so that the reader has a capsule look at the entirety of the plan scope. Details should be provided in subsequent sections of the plan.

1.3 Organization of the LTS Plan

The site-specific plans can be organized in a number of different ways, depending on site type, size, LTS activities, or schedule. Describe the organization of the plan and the basis for the approach taken.

2.0 Site Background

2.1 Site Conditions/Description[5]

Provide a clear record of what space and media fall under the LTS plan such that future stewards understand the full extent of the property for which activities are to be conducted. Describe the physical boundaries of the site or portions of the site to which the LTS plan applies. This may also include activities outside the site boundary if, for example, a groundwater plume has moved offsite and groundwater use restrictions are deemed necessary. The description could be supplemented with maps, GIS coordinates, survey benchmark reference points, photographs, or other means of describing the physical boundaries of the site/portion. Identify the location of areas such as buffer zones, location of specific waste management areas, boundaries of groundwater plumes, and location of residual hazards to the extent that they can be physically mapped out.

Address characteristics of any offsite location affected by the Department's LTS responsibility, including current uses, potential future uses, and liens and other property rights. This includes any offsite location where residual hazards are or are anticipated to be located (e.g., offsite soil contamination or groundwater plumes) for which DOE is responsible for conducting LTS activities, if applicable, as well as potential effects that the offsite activities may have on the site (e.g., industrial, agricultural, or residential uses).

Most of the characteristics listed should describe the site in its entirety. However, to the extent that portion-specific characteristics are important for LTS management, these characteristics and settings should be clearly identified in the description of the unique portions. For example, a portion of the site may border a wetland, making LTS responsibilities different for that particular portion. There may be multiple watersheds onsite, which would also require the descriptions to allow for characterization of the unique aspects of the watersheds.

The site description should include the following:

- Physical Site Conditions.
- Regional Setting.
- Elevation/Topography
- Climate and Weather.
- Geologic Setting.
- Demography.
- Liens and Other Property Rights.

2.2 Site Operational History

Summarize the history of the site in terms of previous occupation and use. The operational history should include the following:

- Former occupants and operators.
- When operations were conducted.
- Processes and products that were employed at the site.
- Waste materials and contaminants that were produced as a result of production work.
- Historical photographs of the site, if available.
- Acquisition history; current and historical property ownership.
- References to CERCLA, RCRA, and NEPA documents and other historical documents that describe historical site conditions.

[5]The content of this section may be subject to new security requirements post September 11, 2001.

2.3 Remediation Process

Summarize all actions (not just those resulting in LTS requirements) taken relative to site contaminants (cleanup actions); closing, stabilizing, and decontaminating and decommissioning onsite facilities; closing waste management disposal cells onsite, thus indicating how risk has been managed and what implications may be put to future monitoring results. If applicable, identify those waste management disposal cells not yet included but anticipated to be included in the LTS plan once they stop receiving waste. It may also be necessary to describe the condition of offsite areas of contamination to the extent that they are unique to those areas versus the site-wide conditions.

It may also be relevant to provide a synopsis of the original exposure pathways and describe how or if pathways have been terminated. The discussion should include the level of redundancy in those actions such that future stewards can understand the implications of perceived failures and/or proposed changes in site use. The discussion should also clearly reflect uncertainties and assumptions regarding remediation process, thus alerting future stewards to those elements of the model and remedy that may be based on erroneous or missing data. A synopsis of the risk associated with residual hazards and why they prohibit unrestricted use of the site in their current state should be provided.

2.4 Site Conditions at Closure

Identify the location and nature of residual contaminants and physical hazards. It is the presence of these residual hazards that necessitates development and implementation of the plan. Readers seeking more detailed data can be directed to the appropriate information repository. The information in this section can be presented in graphical form (i.e., annotated maps) or other forms such that the location of the contaminants or residual hazards can be identified.

If applicable, identify the assumptions used in developing the sites's end state. Explicitly identify that which is not known or understood so that monitoring data can be properly evaluated and contingency plans maintained where appropriate. Assumptions will be modified or removed as monitoring data are collected and a better understanding of the site is developed.

Clearly articulate assumptions that were made during end-state selection, and selection of LTS activities, etc., such that future stewards can test those assumptions to determine if they are still valid.

3.0 Authority and Accountability

The legal authorities under which LTS will be conducted should be identified and documented. These authorities lead to the types of LTS activities that will be conducted at the site. Identify key organizations or groups responsible for carrying out LTS activities for the site including descriptions of their roles and responsibilities. The plan should include clear identification of the steward and other involved parties as well as how those positions relate to regulators. These key individuals should be identified by a process that involves DOE, regulators, landlords, and stakeholders. In addition, when other parties will carry responsibility for performance of specific LTS activities, those parties and the scope of their responsibilities must be clearly identified (i.e., when the landlord will maintain use restrictions or regulators will monitor resource use). Any agreement that states authority and accountability should be identified and referenced. In addition to identifying the assignment of responsibilities, this section should also identify the communication requirements, especially the knowledge management activities associated with archiving information for future generations. This section should include a list of points of contacts or reference a list of points of contacts.

4.0 Engineered Controls and Post Closure Response

The framework for this part of the LTS plan should follow the form used when communicating with regulators, stakeholders, and the general public. Therefore, this section can be discussed in terms of the LTS activity while other sites will divide this section by location or by the environmental medium that

requires LTS. Regardless of the specific format, the relevant LTS activities should be identified and the topics addressed below should be included.

4.1 Engineered Controls

Describe each engineered control that is being implemented, and how it is being implemented and maintained, as part of LTS program. Included in the discussion on the engineered controls, should be an explanation of the surveillance and maintenance activities by which effectiveness will be monitored, as well as the roles and responsibilities for maintaining the engineered controls. In addition, this section could, if applicable, include a discussion on the role of advances in science and technology on stewardship at the site. When appropriate, this section could describe how new technologies will be integrated into the LTS program.

Summarize key activities necessary to maintain physical engineered controls, such as caps and permeable treatment walls, and provide references for more detailed information. Include a description of the following elements for all components of the engineered controls:

- Maintenance Methods. Describe how routine maintenance will be performed on LTS engineered controls.
- Maintenance Frequency. Identify the frequency for routine preventive maintenance activities and the trigger levels for determining when corrective measures are required.
- Maintenance Reporting Requirements. Identify reporting requirements for routine maintenance activities and determine the trigger levels for reporting events or maintenance needs (e.g., repairs).

If monitoring activities are part of LTS at the site, a description of each of the following for each monitoring activity should be included in the LTS Plan:

- Medium. Identify the medium that is being monitored (or will be monitored) and the location of the monitoring.
- Method. Identify the method to be employed for monitoring activity.
- Frequency. Identify the frequency of monitoring.
- Objectives of Monitoring Activities.
- Reporting Requirements. Describe reporting requirements for the results of the monitoring activities.
- Emergency Response and Corrective Action. Identify the linkage between monitoring and inspection observations and emergency response and/or corrective actions arising from adverse findings. Identify the trigger criteria that would require implementation of contingencies. This includes a description of how the data will be interpreted and what the threshold criteria is for determining when contingent actions are warranted. This section should also describe the procedure for implementing emergency response, when required, and the procedure for implementing corrective actions, when required. It should also describe the contingency plans and actions identified as a part of the existing uncertainty management strategy.
- Quality Assurance. Describe the quality assurance program under which routine inspections will be conducted.

Many of the specific details of the maintenance and monitoring will be covered in other documents and should be referenced in the LTS Plan.

4.2 Uncertainty Management

Provide a discussion of the link between the conceptual site model and assumptions provided in the site description. The objective is to explicitly identify that which is not known or understood (the uncertainties) so that monitoring data can be properly evaluated and contingency plans developed and maintained to help manage potential future risk. Uncertainties should be identified and communicated to stakeholders and regulators. These uncertainties should be identified in several areas, including, but not

limited to: regulatory changes, land use change (both onsite and offsite), failures in land use controls, technology effectiveness (in terms of performance), changes in ambient subsurface conditions, changes in facility use, etc. The plan should also clearly articulate assumptions that were made during end-state selection, and selection of LTS activities, etc., such that future stewards can test those assumptions to determine if they are still valid.

4.3 Contingency Plans/Emergency Response

Identify the criteria that would require implementation of contingencies. Describe how the data will be interpreted and what the threshold criteria is for determining when contingent actions are warranted. Describe the procedures used to evaluate contingencies including a contingency analysis, showing the possible responses and reporting procedures including public notification requirements. If appropriate, include a discussion of onsite or offsite areas that are subject to a release (failure) and the contingency measures in place. Describe the emergency response and reporting procedures including public notification requirements

5.0 Institutional Controls and Land Use Planning

5.1 Institutional Controls

Describe the institutional controls being implemented, and how they are being implemented and maintained, as part of the LTS program. This should include a description of other use/access restrictions required to maintain protectiveness and describe the location of where these controls are in effect at the site. Controls on off site properties that are required for the remedy should be included in this discussion. Describe the overall strategy for institutional controls that demonstrates in protectiveness should a control fail. An explanation of the surveillance and maintenance activities by which effectiveness will be monitored, as well as the roles and responsibilities for maintaining the institutional controls should be provided.

Methods selected to monitor institutional controls, as well as a description of each surveillance activity should be provided including:

- Types of Inspection. Describe the inspection activities required to monitor institutional controls.
- Objectives of Inspection Activities. Clearly identify the objective(s) for each inspection activity.
- Frequency. Identify the frequency at which each type of inspection is required.
- Reporting Requirements. Describe all routine reporting requirements for the results of inspection activities. Also address reporting requirements when inspections find that some sort of corrective measure or emergency response is warranted.
- Emergency Response and Corrective Action. Identify the linkage between inspection observations and emergency response and/or corrective actions arising from adverse findings. Identify the trigger criteria that would require implementation of contingencies. This includes a description of how the data will be interpreted and what the threshold criteria is for determining when contingent actions are warranted. This section should also describe the procedure for implementing emergency response, when required, and the procedure for implementing corrective actions, when required. It should also describe the contingency plans and actions identified as a part of the existing uncertainty management strategy.
- Quality Assurance. Describe the quality assurance program under which routine inspections will be conducted.

Many of the specific details of the maintenance and monitoring will be covered in other documents and should be referenced in the LTS Plan.

5.2 Land Use Planning/ Implementation

Address land use planning aspects not specifically addressed as institutional controls.

- Site/Portion Land Use Maps. Provide maps depicting land use and land use restrictions for the site and specific portions addressed by the LTS plan. Identify potential LTS implications if the land use changes.
- Land Use Definitions. Define the scope of activities intended within each land use category, so that stewards have a clear understanding of how the definitions were used when describing land use.
- Land Use Policies. Discuss the key policies impacting land use at the site and/or portion of the site addressed by the LTS plan.

Include a graphical representation of current and anticipated future land use accompanied by definitions of those uses.

6.0 Regulatory Management

Provide the regulatory and institutional framework for LTS. As LTS activities are discussed, the regulatory compliance requirements at the site (or portion of the site) that will impact LTS should be mentioned. For instance,

- Identification of all LTS activities that are specifically required by regulation, statutes, Federal Facility Agreements, Records of Decision, permits, compliance orders, licenses or other third-party enforceable agreements and enforceable mechanisms.

- Identification of all LTS activities that will be conducted pursuant to DOE Orders, policies, guidance.

- Identification of any other requirements addressed in the LTS plan, such as agreements with third parties (e.g., land use or access agreements).

7.0 Funding and Human Resource Requirements

7.1 Funding

Provide the basis for the anticipated costs of the LTS activities based on a technical baseline for LTS programs and activities at the site. Include assumptions used to develop the cost estimate, as well as assumptions for determining when sites or portions of a site will start and stop LTS activities. Discussion should include a description of the cost model used and identify those activities that are provided on a site-wide basis (e.g., site-wide fence maintenance), those activities that can be provided on a unit-cost basis (e.g., cost to monitor a single well); and those costs generated for activities at a specific portion of a site (e.g., costs associated with a specific groundwater plume, disposal cell, etc.). If possible, a cost model may be developed and used in estimating site specific cost estimates to ensure consistency among the sites.

7.2 Human Resources:

Describe the human resource needs including all technical functions and qualifications necessary for the technical implementation and administration of LTS activities. Include discussion of other on-site personnel needs and specific duties.

8.0 Information/Records Management

Summarize procedures for the two key types of site-related information: 1) records that document past operations and activities; and 2) monitoring data generated as a part of the LTS program. Identify the records that will be archived in a permanent repository and include a description of the following:

Identification of LTS-Critical Information. Identify types of records and data critical to implementing LTS at the site, and describe how these records and data will be identified as LTS-critical.

Information Preservation. Identify the methods and means by which information will be preserved. Includes all types of data deemed necessary (e.g., maps, photos, documents, electronic files and databases, etc.).

Storage and Archiving LTS Records. Describe how and where records will be stored, the length of time they will be stored, and for what purpose the records are being maintained.

Records Retrieval and Migration. Describe how record access will be enabled and the measures necessary to ensure compatibility with information hardware and software at future dates in light of continual technological advances in information management. Discussion should include location of records index or taxonomy so stewards can easily identify and locate archived records or data.

Public Access Systems. Identify the means by which the public will be afforded access to records. Identify which of the LTS records the site anticipates will be requested by the public and which records may be made accessible.

9.0 Public Participation

Identify specific activities that involve the public, such as maintaining land use planning documents and records (e.g., a historical record of community activities/population changes, industry activities), and to the extent they impact LTS planning and implementation, enforcing use and access restrictions, providing maintenance and/or surveillance support (e.g., conducting visual surveys of fences, cap integrity), and communicating to stewards any changes in land use that may impact the LTS activities (e.g., rezoning for industrial or residential use).

Describe the plan for community involvement, including roles and responsibilities during LTS plan development, modification, and implementation. It could also include the key points at which public meetings will be held, specific activities requiring community involvement, the extent to which DOE will rely on communities to provide assistance in maintaining controls, etc.

10.0 Cultural, Natural, and Historical Preservation

Describe the natural and cultural resources that will need to be managed for LTS including biological resources, threatened and endangered species, archeological and cultural resources, Native American treaty rights, and /or other natural and cultural resource issues that may be site specific.

Describe a discrete system or process that is in place to protect information about sensitive and natural resources from inappropriate or unauthorized use or access. Include a discussion of locations, where known and/or identified, and characteristics of natural and cultural resources that need to be managed for LTS.

PREFACE TO THE SITE TRANSITION FRAMEWORK FOR LONG-TERM STEWARDSHIP

This document provides a framework for the transition of a site or portions of a site from cleanup to long term stewardship. The framework is a tool to help facilitate a smooth transition from remediation into long-term stewardship, and provides a checklist approach for affected parties. The goal is to ensure that nothing in the closeout process has been overlooked and that appropriate actions have been completed prior to a site's transfer into long-term stewardship.

This framework identifies specific information and data requirements; however, it is only a framework and should be adapted to accommodate unique site-specific requirements, needs, and documents. Exceptions to the framework are expected and should be worked out on a site basis by the affected and responsible parties. Ideally, this framework should be used as early in the remediation process as possible. Subsequent reviews should be conducted and used to verify that all appropriate steps have been, or will be taken, to close out the site and prepare it for long-term stewardship.

This document does not, in any way, serve as a replacement for, or alternative to, the required regulatory processes. This framework is not intended to impose additional requirements on the owners or operators of the sites. Furthermore, it should not be interpreted as a land transfer mechanism.

The Department of Energy is applying the draft framework on an informal basis to a variety of sites that are scheduled to transition from closure to long-term stewardship (e.g., a FUSRAP site, a UMTRCA Title II site, the Weldon Spring and other closure sites, and continuing mission sites). Upon approval, the intention is to apply the framework on a more systematic basis.

SITE TRANSITION FRAMEWORK FOR LONG-TERM STEWARDSHIP

I. Authority and Accountability are Assigned and Documented:

- This section reviews the assignment of accountability and authority for responsible and affected parties for long-term stewardship.

A. All documents allocating the roles and responsibilities of responsible and affected parties have been approved and signed (e.g., Memorandum of Agreement, Memorandum of Understanding, or Interagency Agreement, Cooperative Agreement).

B. Each federal or non-federal entity who will be responsible for long-term stewardship activities listed in section I(A) have been identified. Funding sources for each activity have been identified.

C. Appropriate governmental policies and procedures for managing resources are incorporated into the long-term stewardship plan and agreements.

D. The legal authority under which long-term stewardship will be conducted has been identified and documented.

E. Authorities relating to Institutional Controls are discussed in paragraph IV.

II. Site Conditions are Accurately and Comprehensively Documented:

- All documentation identifying site historical uses, characterization, and remedial action, including the Preliminary and Final Closeout Reports have been completed and made available to the public.

A. The site at the time of closure, including all remedies and remaining hazards, has been described. Examples include:

1. Physical features of the site, including, site topography, geology, hydrogeology, site and area boundaries, etc.
2. Locations of active, inactive, and decommissioned buildings, structures, and surface and subsurface infrastructure (e.g., utilities).
3. Locations of residual hazards and associated engineered and institutional control systems.
4. Locations of groundwater wells, wastewater outfalls, and air quality monitoring stations. Information has been depicted on-site maps.
5. For those sites undergoing closure, locations of off-site buildings and structures, important ecological resources, and associated potential receptors in the vicinity of the site.
6. Characteristics of the remaining contaminants (e.g., radioisotope, activity, and physical form).
7. If a "No Further Action" has been reached and agreed to, this should also be indicated.

B. For those sites undergoing closure, a conceptual site model for long-term stewardship has been completed, showing the relationships between existing residual hazards, environmental transport mechanisms, exposure pathways, and human/ecological receptors.

C. All remedial action documentation has been completed and approved by regulators.

D. Results of any Natural Resource Damage Assessment, where applicable, performed with associated documentation has been made available. This assessment should discuss the parties' potential environmental liability at the site.

III. Engineered Controls, Operation & Maintenance Requirements, and Emergency/Contingency Planning are Documented:

A. Engineered controls have been identified and documented, information should include:

1. Design and construction drawings, specifications, and completion report
2. Site physical and geotechnical data.
3. Locations of engineered controls accurately identified and depicted on site maps.
4. Identification of on-going remediation and related waste management activities.
5. Performance history assessments indicating successful operation.
6. A life-cycle cost estimate, including basis and assumptions. The life-cycle cost estimate should be based on best available data, recognizing that in most cases the long-term stewardship activities may be on-going for decades.
7. A master schedule of on-going activities has been made available, including exit criteria outlining when engineered controls are no longer necessary.

B. Operation & Maintenance (O&M) activities have been documented, funding is in place, and a party has been selected to perform the necessary activities.

1. Surveillance and monitoring requirements have been documented (e.g., scope frequency, reporting, process descriptions, and analytical parameters & methods). This document should allow for changes that are consistent with the selected remedy.
2. The cost, including basis and assumptions, of operations, maintenance and surveillance activities have been determined and documented. The request for funding should be in accordance with applicable budget appropriations procedures.
3. An agreement is in place for performance of all O&M activities.

C. Emergency/Contingency planning and the authority and responsibilities to implement have been identified.

1. Uncertainties associated with residual hazards, fate and transport mechanisms, exposure pathways, and the effectiveness of long-term stewardship activities have been identified.
2. Scenarios related to each uncertainty have been identified (e.g., failure scenarios).
3. Roles, responsibilities, and procedures to respond to each scenario have been established.

IV. Institutional Controls and Enforcement Authorities are Identified:

A. Land Use/Institutional Controls have been implemented and approved by the regulator. All institutional control components of each implemented remedy are described (e.g., future lands use assumptions upon which each implemented remedy is based, associated land use restrictions).

1. On-site and off-site land uses for each area (property) and its associated land use assumptions have been identified.
2. Procedures for managing, assessing potential changes, and enforcing on-site and off-site (as appropriate) land uses have been documented and are being conducted.

3. Institutional controls established as part of an implemented remedy have been identified
4. Roles and responsibilities have been outlined for responding to requests to change existing land uses.
5. Procedures have been put in place for periodic review of land uses. Performance history indicating successful operation has been provided.
6. Procedures for management and periodic reassessment of institutional control restrictions are in place.
7. Off-site easements implemented to ensure the protectiveness of the remedy have been documented.
8. Exit criteria outlining when engineered controls are no longer necessary has been documented.

B. Property records (as required by applicable regulations and/or guidance).

1. The site's real estate history has been documented, including identification of former property owners, deed restrictions, or other land use restrictions.
2. Site boundaries and site markers are easily identified and documented.
3. On-site and off-site easements, rights of way, and other property access rights have been established and documented.
4. Water, mineral, and other natural resource rights have been identified.
5. Tribal treaty rights and other U.S. Government obligations have been identified.
6. Areas where long-term stewardship activities will be conducted have been documented in the property records.

V. Regulatory Requirements and Authorities are Identified:

- Regulatory requirements regarding residual contamination have been identified. All regulatory documents are maintained and available to the public (e.g., Records of Decision, RCRA Permits and Corrective Action Decisions, Consent Orders, Interagency Agreements, Federal Facility Agreements).

A. Regulatory decision documents and associated site characterizations have been identified and are either complete or scheduled for completion and are maintained in accordance with regulatory requirements.

B. The implemented remedy and associated long-term stewardship activities are certified to be in compliance with all regulatory requirements (e.g., appropriate agreements have been entered into with appropriate regulator).

C. Five–Year Review results have been made available. Future five-year reviews, including supplemental analysis of site-wide Environmental Impact Statements, should be planned and consistent with EPA guidance.

D. EPA NPL Status and/or RCRA permit status have been clearly indicated (e.g., de-listing, partial de-listing, non-NPL).

E. NRC License Status has been established. This should identify the license holder and the development of license transfer plans.

F. Locations of documents have been identified and are accessible.

VI. Long-Term Stewardship Budget, Funding, and Personnel Requirements are Identified:

A. A technical baseline document for long-term stewardship programs and activities at the site has been developed.

B. Funding (consistent with technical baseline).

1. Funds for long-term surveillance and maintenance have been identified and are available or requested.
2. Estimates for the annual funding requirements for long-term stewardship activities, associated oversight, and information management requirements have been derived.
3. Funding assurances have been made based on those estimates.
4. Mechanisms to transfer funds required for long-term stewardship have been established.
5. Funding mechanisms for long-term stewardship activities and regulatory oversight activities conducted by other federal and non-federal entities have been established (e.g., documentation of financial assurance agreements for long-term monitoring and surveillance funding).
6. Estimates required for financial assurance payments have been determined.
7. Authority has been granted to the steward to use, or have access to, funds related to long-term stewardship.

C. Personnel requirements have been identified (for activities not previously addressed within this set of criteria).

1. Personnel functions and qualifications necessary for the technical implementation and administration of long-term stewardship activities have been identified.
2. A determination for the need of other on-site personnel has been made identifying the specific duties that may be required.
3. A closeout plan for the disposition of excess federal full time equivalents has been developed.

D. A business close out process has been developed.

VII. Information and Records Management Requirements are Satisfied:

A. The Transfer of Information.

1. Information needed for long-term stewardship has been identified and transferred.
2. Practices and procedures for the collection, evaluation, storage, retrieval, and use of this information have been established (e.g., evaluation of new technologies).
3. Location for storage of information has been identified. Where the information will be placed has occurred.

B. Information management planning has been performed and is acceptable to the stakeholders.

1. Systems and procedures for the transfer of archival long-term stewardship information in one or more on-site or off-site repositories have been developed.
2. Retention schedules that are appropriate for the management of information for long-term stewardship have been determined.

3. Systems and procedures to establish and facilitate public access to and retrieval of information critical to long-term stewardship are in place. Examples could include, but are not limited to, internet access, local library, on-site information center (e.g., Interpretive Center, Museum, etc.), etc.
4. Classes of LTS information users have been identified and the retention and retrieveability requirements identified and implemented.

VIII. Public Education, Outreach, Information and Notice Requirements are Documented and Satisfied:

A. List of site stakeholders with associated address information has been developed and updated.

B. Community involvement tools have been developed and are being used at regular intervals (e.g., fact sheets, newsletters, inspection reports, 5-year review results, email notifications, public meetings, etc.).

C. Costs associated with public involvement have been estimated (e.g., Oversight Committees, meeting locations, etc.). Where approved, any such cost would be included in the funding requests

D. Updates of the administrative record/information repository on-site are annually (at a minimum) made available to interested parties.

IX. Natural, Cultural and Historical Resource Management Requirements are Satisfied:

A. A discrete system or process is in place to protect information about sensitive and natural resources.

B. Biological resources, threatened and endangered species, archeological and cultural resources, Native American treaty rights, and/or other natural and cultural resource issues have been addressed.

C. Locations and characteristics of natural and cultural resources, needing long-term stewardship, have been identified (e.g., precise locations of cultural and natural resources). A management system is in place and operating successfully.