

NATIONAL STEWARDSHIP WORKSHOP
October 25-27, 1999
Oak Ridge, Tennessee



WORKSHOP REPORT

Table of Contents

Introduction	1
Workshop Approach	2
Next Steps for Stewardship	4
Workshop Agenda	4
Conclusions	7
Attachments	

List of Attendees
Stewardship Discussion Papers
Presentation Materials

INTRODUCTION

The Oak Ridge Site Specific Advisory Board hosted the 1999 Department of Energy (DOE) Site-Specific Advisory Board (SSAB) Stewardship Workshop in Oak Ridge Tennessee, on October 25-27, 1999. The Stewardship Workshop was the third in a series of national SSAB workshops to focus on specific issues that affect all DOE sites. The first workshop on low-level waste was hosted by the Nevada Test Site SSAB in Las Vegas, Nevada in August 1998. The second workshop on transportation of radioactive materials was hosted by the Fernald site SSAB in May 1999 in Cincinnati, Ohio.

The Stewardship Workshop was designed for stakeholders who are involved in public participation activities for remediation of major facilities in the DOE complex. The goal of the workshop was to:

1. Improve stakeholder understanding of stewardship-related issues and decision-making processes.
2. Foster dialog among SSABs about stewardship issues and create opportunities for continuing that dialog.
3. Identify areas of shared concern where DOE should consider additional activities for stewardship planning and implementation.

The Oak Ridge SSAB chose to host the Stewardship Workshop due to its ongoing interest and activities in developing a robust stewardship plan for the Oak Ridge Reservation. In Oak Ridge, organized public involvement in stewardship issues began with the End Use Working Group, a broad-based stakeholders' group formed in 1997 by the Oak Ridge SSAB. The group was asked by DOE Oak Ridge Operations to study the contaminated areas on the DOE Oak Ridge Reservation and to make recommendations about future uses of the land. During End Use Working Group deliberations, it was apparent that some level of radioactive and chemically hazardous contamination would remain on the Reservation and that a stewardship program would be needed to protect human health and the environment from future risks associated with contamination. Thus, in collaboration with the Stewardship Committee from Friends of Oak Ridge National Laboratory, members of the Local Oversight Committee Citizens' Advisory Panel, the City of Oak Ridge Regional Planning Commission, and other stakeholders, an End Use Working Group Stewardship Committee was formed.

The product of the End Use Working Group Stewardship Committee, the 1998 *Oak Ridge Reservation Stakeholder Report on Stewardship*, was widely distributed and has influenced stewardship planning at local and national levels. The report presents the attributes and basic elements of a long-term stewardship program; describes the existing and proposed statutory provisions for stewardship and institutional controls; and presents recommendations for a Reservation stewardship program, including stewards, physical and institutional controls, information systems, research, and funding options.

One of the goals of the End Use Working Group Stewardship Committee was to “promote interaction concerning stewardship among individuals and appropriate local, state, and federal organizations.” To that end, in February 1999, the Oak Ridge SSAB proposed a workshop of complex-wide DOE SSABs to generate a general understanding of the types of issues and activities encompassed in stewardship for contaminated areas. The proposal was approved by the chairs of the twelve DOE SSABs and the DOE Headquarters Office of Intergovernmental and Public Accountability provided financial support for the workshop.

WORKSHOP APPROACH

Fifty-five SSAB members, representing nine sites, and 75 other participants, including representatives from the Department of Energy, numerous state agencies, and other organizations, attended the workshop. (See attached list of participants.)

Background Materials

To improve stakeholder understanding of stewardship-related issues and decision-making processes, and to provide stakeholders a broad-based understanding of DOE stewardship requirements and activities, the Oak Ridge SSAB developed five discussion papers. The papers were designed around the following topics:

- What is stewardship?
- What needs to be done?
- Who should do what?
- How should we deal with stewardship information?
- How should stewardship be funded?

Each of the discussion papers identified a number of key stewardship questions. Each of the SSABs attending the workshop were asked to discuss these questions among themselves prior to coming to the workshop so that workshop discussions would represent a broad-based view of the issues and concerns among stakeholders throughout the country. (Copies of the discussion papers are attached.)

Agenda and Organization

The workshop was organized to allow participation of attendees in a variety of plenary sessions, core topic breakout groups, and site-specific breakout groups. The goal was to foster dialog among the SSABs about stewardship issues, identify joint issues and concerns, and draft statements about possible “Next Steps for Stewardship.” These “Next Steps” statements were intended to identify areas of shared concern where additional activity was needed. However, the statements were not meant to represent a consensus view of all of the SSABs present. While SSAB members were asked to make sure the views of their site stakeholders were presented throughout the

workshop, participation was on an individual basis and those attending were not provided with the authority to represent the official position of their SSABs. The attendees alternated between meeting in plenary session and the breakout groups. The workshop agenda is shown in Figure 1. This agenda was developed based on the experience gained in previous SSAB workshops.

Workshop Agenda

Tuesday, October 26, Oak Ridge Mall Conference Center

- 8:30 - 9:00** **Welcome and Introductions**
 Steve Kopp, Chair, Oak Ridge Site Specific Advisory Board
 Leah Dever, Manager, Oak Ridge Operations Office
 Mayor, City of Oak Ridge (invited)
- 9:00 - 9:30** **Introduction to Stewardship and Workshop Orientation**
 Doug Sarno, Workshop Facilitator
- 9:30 - 10:45** **Panel Session: Perspectives on Stewardship**
 Jim Werner, USDOE Headquarters
 Earl Leming, Tennessee Department of Health and Environment
 Jim Woolford, USEPA Headquarters
 Russell Edge, DOE Grand Junction Office
 Local Government Representative (TBA)
- 10:45 - 11:00** **Break**
- 11:00 - 11:45** **Q & A on Panel Session**
- 11:45 - 12:45** **SSAB Introductions (five minutes per SSAB)**
- Background on site-specific stewardship activities for each SSAB

Fernald	Nevada Test Site	Rocky Flats
Hanford	Oak Ridge	Sandia
Idaho	Savannah River	
Northern New Mexico	Pantex	
- 12:45 - 2:00** **Lunch**
- 2:00 - 3:20** **Stewardship Plenary Discussion**
 The discussion papers will be used as a basis to conduct a full discussion of stewardship issues among all attendees.
- 3:20 - 5:00** **Breakout Sessions**
 Attendees will organize into five groups. Groups will continue general discussion of all stewardship issues. Each group will identify the top five topics they wish to be addressed by the Workshop. SSABs must send at least one representative to each group.

5:30 - 7:30 Caucus and Reception

Wednesday, October 27, Oak Ridge Mall Conference Center

- 8:30 - 9:00 Plenary Discussion of Proposed Core Topics**
Facilitators will organize the results of the breakout groups to identify the top four or five topics participants want to evaluate in additional breakout groups. These topics will be discussed and approved by all participants.
- 9:00 - 9:30 Site-Specific Breakout Session I**
Site representatives will identify site-specific issues for each of the core topics and assign as least one representative to each group.
- 9:30 - 11:30 Core Topic Breakout Session I**
Core Topic breakouts assemble and discuss their topic to identify *Next Steps for Stewardship* which may include: identification of information needs, next activities needed for that topic by DOE or SSABs, key stakeholder concerns or issues.
- 11:30 -12:00 Site-Specific Breakout Session II**
Site representatives will provide site-specific feedback to the *Next Steps for Stewardship* identified by each breakout group.
- 12:00 - 1:00 Lunch**
- 1:00 - 2:00 Core Topic Breakout Session II**
Refine *Next Steps for Stewardship* based on site-specific feedback. Select presenters and develop overheads for the Plenary presentations.
- 2:00 - 3:00 Core Topic Presentations to Plenary**
Each breakout group presents its *Next Steps for Stewardship* to plenary, issues are organized to reflect output of conference.
- 3:00 - 3:45 Workshop Debrief and Next Activities for the SSABs**
Participants will have an opportunity to evaluate the Workshop and provide input to future SSAB activities on Stewardship and other inter-SSAB activities.
- 3:45 - 4:00 Closing Remarks**
Lorene Sigal, Chair, SSAB Workshop on Stewardship
- 4:00 p.m. Adjourn**

The Oak Ridge SSAB facilitator served as the lead in developing this agenda and the workshop structure in conjunction with facilitators and support personnel from the other SSAB sites. Early in the planning stages, conference calls among SSAB chairs revealed a wide range of understanding of stewardship, and of expectations for the

outcome of the workshop. Thus, instead of trying to develop consensus recommendations for submittal to DOE Headquarters, as was done at the SSAB Transportation Workshop, it was agreed that the goal of the Stewardship Workshop would be to enhance understanding of stewardship and how it might apply to DOE sites. It was also apparent early on that no single definition of stewardship would work for all sites, and that the pursuit of a single definition did not make sense at this time. Draft agendas and approaches were discussed among the SSAB Chairs in conference calls and at national chairs' meetings until a final format was developed.

Presentations

The first step in the process was to augment the information provided in the discussion papers with a first-hand look at how stewardship issues were being addressed across the organizations responsible for remediation of DOE sites. A panel session provided presentations and questions and answers from a broad group of experts representing the following viewpoints:

- DOE Policy, as represented by DOE Headquarters;
- DOE Field Implementation, by Grand Junction Projects Office;
- State Regulation, represented by the Tennessee Department of Environmental Conservation;
- Federal Regulation, represented by the U.S. Environmental Protection Agency; and
- Local Government, represented by the City of Oak Ridge.

(See attached copies of presentations):

Deliberations

Following the question and answer period, each site provided a brief introduction to its stewardship issues and then all SSAB participants worked in a plenary session to identify and discuss the major stewardship issues within the group. At the end of the first day of deliberations, five breakout groups were formed to identify a short list of issues for detailed discussion on the second day. Each breakout group was facilitated by one of five individual site SSAB facilitators who were present at the Workshop. Taking the results of the five breakout groups, the facilitators identified the five core topics of most interest. These following core topics were discussed and agreed to in a plenary session on the morning of the second day:

- funding;
- stewardship roles and responsibility;
- community involvement;
- linkages (i.e., tradeoffs and relationships between cleanup and stewardship); and
- information and sustainable responsibility.

Following the morning plenary session, attendees broke into site-specific breakout sessions, where site representatives discussed the site-related issues to bring to the core topic breakout sessions. At least one representative from each site was assigned to each of the five facilitated core topic breakout groups to ensure that a broad base of interests and viewpoints would be represented. Site-specific and core topic sessions alternated once more during the day to ensure that all participants gained a thorough understanding of the main stewardship issues and how those issues were interpreted and viewed among the individual sites.

In each of the five core topic breakout groups, the attendees discussed issues associated with that topic and identified potential Next Steps for Stewardship. In the site-specific breakout groups, SSAB members met with their co-members to discuss results of the core topic breakout groups and to evaluate how the statements were likely to be received at their sites. The site-specific breakouts then provided this feedback to each of the core topic breakouts.

In the final plenary session, each of the five core topic breakout groups presented their proposed next steps for stewardship for discussion by all attendees. The statements were discussed to identify and eliminate any issues or points that attendees could not support. With some minor modifications, the statements were adopted by the consensus of attendees as the product of the Workshop. The consensus was reached with the understanding that the product of the Workshop did not represent agreement or endorsement by the SSABs. With this understanding, the Oak Ridge SSAB submitted the Next Steps for Stewardship to DOE Headquarters as a product of the Workshop.

There was general agreement that workshop attendees would take the next steps for stewardship to their respective SSABs; federal, state, and local governments; tribes; and other stakeholders for further discussion and deliberation. Any site-specific actions relating to the Next Steps for Stewardship was left up to individual site discretion.

A followup workshop on stewardship was agreed to by representatives from the ten attending SSABs. To be hosted by the Rocky Flats SSAB, this followup workshop would be planned after sufficient time has passed to allow for progress in both national and site-specific stewardship planning.

NEXT STEPS FOR STEWARDSHIP

The following ten Next Steps for Stewardship and their associated issues are presented exactly as agreed to by the workshop participants in the final plenary session. While many more issues were identified and discussed throughout the Workshop, each breakout group was asked to develop no more than two statements for final consideration by the plenary to allow for sufficient development of detail. Although the level of detail provided by each group for the final plenary session varied, it is

interesting to note the range of ideas generated and discussed in such a short time. Step one was generated by the funding breakout group; steps two and three by the stewardship roles and responsibility group; steps four and five by the community involvement group; steps six and seven by the linkages group; and steps eight, nine, and ten by the information and sustainable responsibility group.

The preamble to the Next Steps for Stewardship was generated by the community involvement group and was unanimously adopted by the final plenary session. It reads:

DOE, working in cooperation with its stakeholders, needs to provide direction, funding and technical support for the implementation of these Next Steps for Stewardship:

Establishment of a legal mandate for assured stewardship fund(s) for DOE, DOD¹ FUSRAP,² or successor agency sites, separate from remediation and spending funds, to include:

- Determination of how the fund(s) are to be generated
- Planning for and estimating of ownership costs today
- Development of a plan for the application of money for sites
- Assurance of public participation in all of the above

Development of a national policy on stewardship that includes:

- Legal basis (law)
- On-going review
- Allowance for site-specificity
- Establishment of minimum standards
- Continuing research and development
- Funding
- Stewardship termination criteria

Immediate development of enforceable site-specific stewardship plans at each DOE site with the involvement of:

- Tribes
- Federal government
- State government
- Local government
- Public environmental advocates
- Public health officials
- Youth

¹ Department of Defense

² Formerly Utilized Sites Remedial Action Program

Establishment of a national policy for stewardship and the pursuit of legislation mandating the direct involvement of affected stakeholders in site-specific stewardship planning including the development of written site-specific stewardship plans.

Establishment of site-specific mechanisms for regular stewardship reviews and future broad-based stakeholder involvement and oversight.

Development of a better understanding of the tradeoffs and relationships between cleanup and stewardship, for example:

- Full costs
- Risks
- Ecological impacts
- Environmental quality
- Political realities

Development and implementation of stewardship plans that take advantage of the dynamic nature of stewardship, including:

- New technologies
- Changing land use
- Changing risk evaluations
- Information needs of decision-makers

Utilization and/or development of both detailed, robust information systems and permanent systems containing minimal essential information (e.g., plaques, monuments).

Utilization and/or development of information systems with the following characteristics:

- Full characterization of contamination
- Closure configuration
- Declassification of relevant information
- Discrepancies between designs and as-builts
- Life cycle risk profiles
- Hydrogeological profiles
- Lessons learned (e.g., Love Canal)
- Credible futurist scenarios
- Record categories: RODs³ waste transfer, etc.
- Durable and flexible storage media (upgrades)
- Lessons learned from WIPP⁴ and SETI⁵
- Balance national scope with local needs; quality, relevance, and timeliness
- Utilize and integrate local institutions (museums, libraries, historical societies, county records)
- Accessibility

³ Records of Decision

⁴ Waste Isolation Pilot Plant

⁵ Search for Extra Terrestrial Intelligence

Redundancy

Diversity of form and content: oral, written, and video histories

Ensure periodic review to integrate new information

Integrated into the culture

Utilize durable institutions (schools, churches, museums, libraries)

Utilize varied media for participation: signage, kiosks, recreational activities

Develop standardized symbols

In order to ensure sustainable responsibility for long-term stewardship for contaminated areas, the following actions should be taken:

Educate: inform future generations of important history; cultivate long-term stewardship values

Formalize long-term stewardship in legally binding agreements to ensure involvement and accountability

Recruit: “hand off the baton”

Institutionalize: formal local, tribal, state and federal governmental responsibilities

CONCLUSIONS

Some common elements can be found in the Next Steps for Stewardship and the associated issues. Of primary importance to most of the workshop participants were *public involvement* in stewardship and development of *site-specific stewardship plans*. The need to institutionalize stewardship by establishment of a *DOE policy* and the pursuit of *legally binding agreements* was mentioned in six of the ten next steps. *Funding and information* were recognized as vital to the effectiveness of long-term stewardship. And finally, the preamble and the Next Steps for Stewardship make it clear that the federal government (in this case, DOE) must *accept the responsibility for long-term stewardship* of contaminated areas so that future generations and the environment are protected.

While it is too early to judge the impact of the SSAB Workshop on Stewardship throughout the DOE complex, the initial feedback from attendees across all groups (e.g., SSAB members, state regulators, federal and local government participants) was extremely positive.

It was generally agreed that the workshop:

- contributed to understanding the concept of long-term stewardship and its relationship to remediation of contaminated areas on DOE sites;
- highlighted important long-term stewardship issues;
- provided a springboard for SSAB stewardship initiatives;
- provided substantive input to DOE Headquarters planning for long-term stewardship; and

- provided a solid basis for the next SSAB stewardship meeting.

From the standpoint of the Oak Ridge SSAB and the Oak Ridge Stewardship Working Group, the SSAB Stewardship Workshop met goals established in 1998 to “promote public understanding of stewardship” and to “promote interactions concerning stewardship among individuals and governments,” and in 1999 to “further a national commitment to environmental stewardship across Department of Energy sites.” It is gratifying that the DOE is accepting the responsibility and implementing activities necessary to maintain long-term protection of human health and the environment from hazards posed by residual radioactive and chemically hazardous materials.

What Is Stewardship?

No single definition of stewardship will work for all sites in the DOE complex. There are too many site-specific conditions and issues to consider. Instead, we need to generate a general understanding of the types of issues and activities that fit under the stewardship umbrella. In its 1998 report, a group of stakeholders from Oak Ridge defined stewardship as:

Acceptance of the responsibility and the implementation of activities necessary to maintain long-term protection of human health and of the environment from hazards posed by residual radioactive and chemically hazardous materials.[@]

For the purposes of the SSAB Stewardship Conference, we propose to start with this general definition and consider stewardship as all of the activities that must take place to ensure the continued protection of human health and the environment at sites where residual contamination will be present. As a term, stewardship has often been used to apply to institutional controls, or to site markers that will be understood by as-yet unknown civilizations. While it is those things, it is also much more.

Stewardship in the general sense is not a new concept. Since the dawn of civilization, whenever people gather to organize societies, systems of stewardship develop. For example, governments preserve the rights of property use and ownership for centuries through the use of titles on real property. In a current example for federal lands, the National Park Service practices stewardship by purchasing and managing lands with unique natural and cultural histories for the benefit of current and future generations.

Why is Stewardship Important?

Almost all DOE facilities have radioactive and chemically toxic contamination resulting from more than 50 years of nuclear research and weapons production. This contamination is present in a wide variety of configurations that, if left uncontrolled, would present potentially significant hazards to human health and the environment. These contaminated areas require management for the lifetime of the hazard, essentially forever in some cases. Returning contaminated areas to pristine conditions is often risky for excavation and transportation workers; is impractical for cost, technical, and logistical reasons; and does not always result in overall risk reduction. Furthermore, citizens and governments often oppose the transport and off-site disposal of contaminated materials. Even if off-site disposal is implemented, the responsibility for stewardship is merely transferred from the waste-shipping facility to the waste-receiving facility.

It is becoming increasingly clear that few, if any, DOE sites can afford to ignore stewardship. Whether they are closure sites like Fernald or sites with a long-term mission like INEEL, management of residual contamination requires perpetual stewardship.

It is not enough to say that these properties will stay in federal hands and therefore adequate stewardship is ensured. We all know that the government is fallible, and that long-term stewardship plans are mostly undeveloped.

Why Should We Care About Stewardship Now?

At first glance, stewardship may appear to be an issue that does not require much consideration until after remediation is complete--an important, but not a pressing issue. However, the effectiveness of remediation depends on stewardship. Caps will fail and fences will fall without maintenance, land use controls are meaningless without enforcement, monitoring programs cannot be conducted without adequate resources, and future decisions cannot be made without adequate and accurate information of what was done during remediation.

Once we recognize how important a stewardship program is to the effectiveness of remediation, it becomes obvious that planning for stewardship must accompany planning for remediation. Such planning is important to ensure that:

1. Future generations fully understand the nature of the problem that has been left behind;
2. The proper level of physical maintenance is conducted so that engineering structures maintain their integrity for the life of the hazard;
3. Legal measures are in place to limit improper use of contaminated property;
4. Resources will be made available to conduct stewardship activities or to respond to emergency situations;
5. Appropriate information is available for future generations.

To make good decisions, these issues must be addressed during remediation planning. Stewardship requirements must be put in place by the time remediation of contaminated areas is completed. Stakeholders will find it increasingly difficult to support decisions which leave contamination in place without sufficient assurance that the mechanisms for effective stewardship exist and will be implemented successfully.

What Needs to be Done?

The nature and level of stewardship is a site-specific decision; however, there are a number of attributes and elements of stewardship that will likely apply in all cases.

1. Attributes of Successful Stewardship

Responsibility for Stewardship Must Be Identified

Stewardship of contaminated sites requires that society be willing to accept responsibility for providing a healthy and safe environment for current and future generations. For federal facilities, this responsibility rests with the federal government. However, the specific roles and the allocation of adequate resources are far from certain. Stakeholders, local governments, regulators, and other decision-makers must accept that they need to work together to develop and implement a stewardship program that works for the community. A legal basis for stewardship can be ensured by specifying stewardship requirements in formal decision documents and agreements.

Long-Term Effectiveness Must Be Assured

Stewardship programs must be designed to protect human health and the environment for the lifetime of the contaminants. Just as the type of contaminant determines the type of remediation system, the life of the contaminant determines the length of stewardship. If stewardship fails, so does remediation. To be effective over the long term, stewardship requires redundant systems and controls, and appropriate contingency plans for possible adverse events. In addition, resources for conducting stewardship must be assured and stewardship requirements must be enforceable.

Stewardship Must Be Adaptable

We do not know what society will be like hundreds and thousands of years from now when many wastes will still be hazardous. Stewardship programs must be able to adapt to changing physical conditions and political demands in order to provide effective ongoing protection of human health and the environment. Advances in technology, changes in contaminant and environmental conditions, failure of remediation systems, and changing demographics necessitate periodic reevaluation and refinement of stewardship activities. Stewardship programs must accommodate such adjustments.

2. Elements of Successful Stewardship

Authority and Funding

At the beginning of any stewardship program, clear authority and responsibility must be established to ensure implementation of programs to protect human health and the environment. At federal facilities, this authority originates in the Congress and is delegated to an appropriate federal entity. Reliable long-term funding is critical to the

success of stewardship because competent sustainable stewardship is impossible without financial support. The annual appropriation process used for funding most government programs will be used to fund stewardship in the near term but may not provide the best source of funding over the long term.

Stewards

Stewards are the individuals or groups responsible for conducting specific stewardship activities. Stewardship functions can be carried out by existing organizations or new organizations can be developed. When more than one steward is involved, coordination among stewards is essential to avoid unnecessary conflict and duplication of effort, however some redundancy of responsibilities may be desirable. Stewards generally fit into one of three primary categories: the principal steward, implementation stewards, or oversight stewards.

- ✧ **The principal steward** has legal responsibility for contaminated land and facilities including the financial obligation to ensure adequate funding for stewardship, and to take corrective action if the stewardship program becomes ineffective.
- ✧ **Implementation stewards** conduct the actual stewardship activities such as monitoring, maintenance, and record keeping.
- ✧ **Oversight stewards** are outside organizations (e.g., regulators) or stakeholders who ensure that the goals and requirements of a stewardship program are met.

Operations

The success of stewardship is dependent upon numerous operations that must be conducted in perpetuity to ensure that remediation retains its effectiveness and that stewardship systems are working, such as:

1. **Monitoring:** the regular sampling of all contaminated and potentially contaminated media to identify the failure of physical controls and to provide continuous understanding of the nature and extent of contamination.
2. **Maintenance:** upkeep of remediation systems to ensure long-term effectiveness.
3. **Surveillance:** the regular oversight of remediation and institutional systems to ensure that all necessary activities occur.
4. **Enforcement:** the legal implementation of the constraints required to maintain the protection of human health and the environment.
5. **Inspection and Reevaluation:** the periodic review of existing systems and activities to ensure their continued need and/or effectiveness.
6. **Public Participation:** the continuous involvement of the public to ensure citizens' concerns are addressed and relevant public information is provided.

Physical Controls

Physical controls are barriers to limit public access to contaminants and exposure to hazards; physical controls need to be considered within the context of stewardship because their effectiveness depends on proper maintenance. Examples are:

1. **Barriers to Entry:** fencing, natural barriers, buffer zones, and associated signs and markers which isolate and limit access to contamination.

2. **Barriers to Exposure:** remediation measures to control contaminants and/or prevent human contact (e.g., caps, water supplies, and erosion and runoff control).

Institutional Controls

Institutional controls are legally binding provisions designed to control future uses of land or resources by limiting development and/or restricting public access to a site. Institutional controls can be divided into governmental controls and proprietary controls.

1. **Governmental Controls:** use the power vested in a national, state, or local government to impose restrictions on lands under its jurisdiction. Local governmental controls enforced through permitting and inspection processes include zoning ordinances, which can regulate activities such as business development in specific areas, the size of land parcels, the types and sizes of structures, and activities permitted on the land.
2. **Proprietary Controls:** allow owners to control the use of or limit access to property. These include advisories, easements, deed notices or restrictions, and site registries.

Stewardship Information

Stewardship information provides present and future stakeholders with records of residual contamination. Complete information regarding the type, volume, concentration, and location of contaminants, contamination risks, and stewardship requirements must be available. The information essential for a working stewardship program must be accurate, clear, concise, and of appropriate scope and detail. It must be easily accessible to those who need to use it, including stakeholders, and it must be durable so that it lasts over the lifetime of the stewardship program.

Research

When remediation activities are completed, significant data gaps and uncertainties often exist about current and long-term hazards. Present-day regulations are based on current understanding of the hazards posed by exposure to contaminants. Over time, new data may provide better assessments of contamination, risks, appropriate remedial technologies, management of wastes, information for decision making, and stewardship requirements. Much of what we are implementing today to remediate waste problems has never been done before and little is known about the potential long-term impacts of our actions. Long-term research at both the site and national levels is essential to improving our knowledge and the management of residual contamination.

Questions to Consider for this Core Topic

1. What steps should DOE take to ensure that appropriate stewardship activities are planned and conducted at individual sites?
2. To what degree are stewardship activities site-specific and to what degree should stewardship activities be identified by complex-wide guidance?
3. Given the long-term nature of stewardship activities, how should they be approached relative to other remediation activities?

4. What is the appropriate level of public involvement in identifying stewardship activities at sites?
5. When is the right time for stewardship activities to begin and how can we ensure that appropriate steps are taken to implement stewardship in a timely manner?

Who Should Do What?

In Issue Paper #2, we introduced three main types of stewards likely to be needed at any given site:

- ⌘ **The principal steward** has legal responsibility for contaminated land and facilities including the financial obligation to ensure adequate funding for stewardship, and to take corrective action if the stewardship program becomes ineffective.
- ⌘ **Implementation stewards** conduct the actual stewardship activities such as monitoring, maintenance, and record keeping.
- ⌘ **Oversight stewards** are outside organizations or stakeholders who ensure that the goals and requirements of a stewardship program are met.

The Roles of the Federal Government

Because contamination at DOE facilities results from federal government activities and because the federal government is legally responsible for cleanup, the federal government is most likely to be considered as the principal steward for DOE sites. However, depending on the nature of the site's future missions, DOE may not always be the best agency to conduct these activities.

The Roles of State Governments

States may play roles as both implementation stewards and oversight stewards. In some circumstances, states may serve as principal stewards.

The Roles of Local Governments

Local entities such as planning commissions and registers of deeds are important implementation stewards, as are schools and libraries for education and information purposes. Local governments may also fulfill an oversight role in working with other stakeholders to ensure that stewardship activities are conducted.

The Roles of the Public

Public stakeholders may serve one of the most important oversight roles by helping to ensure that stewardship programs and activities continue to be conducted and appropriate to the risks at hand. Continued public knowledge and awareness of stewardship needs and activities is important to the overall success of stewardship.

Determining which stewardship organizations conduct what stewardship activities is a very site-specific decision and will have a great deal of influence on the ultimate success of stewardship. The following are some of the main activities that must be conducted in any stewardship program.

Stewardship Operations

Monitoring of residual contamination and environmental media
Maintenance of physical controls and signage
Surveillance and security of contaminated sites

Institutional Controls

Parcel mapping and public access
Preservation of deeds, easements, parcel maps and Geographic Information Systems
Zoning and use approvals, building permits, and enforcement
Annotated tax records (to include contamination data)
Real estate information systems

Stewardship Information and Public Involvement

Report literature, indexing and abstracting
Working report repository
Long-term archiving
Education
Public involvement and awareness
Permanent stewardship exhibits, public outreach
Public access to CERCLA and other remediation documents

Questions to Consider for this Core Topic Group

1. What is the appropriate role of the federal, state and local governments in the stewardship process and in conducting the specific activities of stewardship?
2. What are the most important stewardship roles and how should they be assigned to an appropriate steward?
3. How should overall stewardship roles be determined?
4. What is the level of public involvement that is appropriate in identifying stewardship roles?
5. How should continued public involvement be assured?
6. To what degree should stewardship roles be identified by complex-wide guidance?

How Should We Deal With Stewardship Information?

One of the most important stewardship activities is the generation and preservation of information. Already at most sites, it is difficult to find accurate information regarding materials that have been left behind. Missing information is generally the result of lesser standards for record keeping during World War II and thereafter. The advent of the environmental laws and requirements for remediation led to lengthy and expensive efforts to characterize contaminated areas prior to remediation. Although the remediation systems we put in place today are the best we can engineer, future generations will have to maintain, repair, and replace these systems. Thus, we must ensure that accurate and accessible information regarding the nature and extent of contamination and our efforts at remediation is available.

What Information is Needed for Stewardship?

Effective stewardship requires a wide variety of information. The public and those responsible for environmental monitoring and land use controls all require detailed information about the nature of residual contamination, the installation of remediation systems, and the expectations regarding the performance of those systems. Information needs to guide us as to what to expect over time and the appropriate actions to take should results differ from those expectations.

How Should Stewardship Information Be Developed?

The information essential for a working stewardship program must be accurate, clear, concise, and of appropriate scope and detail to serve stewardship needs. For example, a CERCLA Remedial Investigation/Feasibility Study contains vast amounts of information that must be condensed to be useful for stewardship activities. Other CERCLA documents prepared during and after remediation also contain important information and must be organized in a manner that is useful to stewardship. Data are meaningless to the user if they are not organized in an understandable and relevant format. A coordinated link should be established between collectors, interpreters, and users of data. The most efficient and accurate way to develop this information is to ensure that the information needs of stewardship are known at the time that the information is generated.

How Should Stewardship Information Be Maintained?

Stewardship information must be kept up to date and be retrievable for the lifetime of a stewardship program. However, over time, the scope and detail will likely require re-evaluation. Since stewardship may be necessary for thousands of years, stewardship information must be maintained with carefully chosen storage technology. As a safeguard against loss, information should be stored in multiple forms and by multiple stewards. The types of information needed and requirements for maintaining that information are best identified at the time of the remediation decision.

How Should Stewardship Information Be Made Accessible?

Basic stewardship-related information should always be stored to be accessible to users of the information and the public. Stakeholders might access stewardship information at a public document room, a neighborhood library, a local oversight board's archives, or an internet web site.

Questions to Consider for this Core Topic Group

1. When should stewardship information be assembled?
2. How should stewardship information be coordinated with the existing administrative records required under CERCLA or other environmental laws; are these records necessary and/or sufficient for stewardship purposes?
3. Who should be responsible for the identification and preservation of stewardship information and how should this be done?
4. What is the public's role in the identification and preservation of stewardship information?

How Should Stewardship Be Funded?

Sustainable stewardship is impossible without reliable long-term funding. The annual appropriation process used for funding most government programs will be used to fund stewardship in the near term but may not provide the best source of funding over the long term.

Stewards responsible for operations (i.e., implementation stewards) must have access to funds, and support must be provided for oversight. A number of potential options for long-term funding may be considered. Most of them would require an act of Congress or other significant government action to implement. These options are briefly discussed below.

Designated Agency: The Congress could designate a government agency or a public-private partnership that would be funded by Congress to conduct stewardship activities at federal facilities throughout the country. Either of these options would offer great visibility to the operation, and the funding for stewardship would be independent of other agency missions. However, it would still be subject to the constraints of government agencies and to the annual appropriation cycle. A stable long-term budget would not be guaranteed.

Entitlement: The federal government could designate stewardship funding as an entitlement similar to the social security fund. Changes in funding or policy would then require congressional action. Although the level of funding would be more stable, entitlements can be abandoned.

Federal Trust Fund: Typical federal trust funds receive money from a tax or fee source, such as social security taxes, gasoline taxes, or severance taxes, and the money is dedicated to specific purposes, such as pensions, transportation needs, or strip-mine reclamation, respectively. The disbursement can be as an entitlement, as in social security, or can be subject to congressional appropriations. There is no obvious tax source for stewardship, but an up-front set-aside of a fund drawing enough entitled income to support stewardship over the coming years is a possibility. A state or a non-profit stewardship corporation could hold the trust fund. Two ways for obtaining the principal are suggested.

Lump Sum Trust Fund. Congress could authorize DOE to purchase a treasury security and/or a conservative equity issue on a one-time basis. The investment would have to generate sufficient income to fund stewardship. For example, \$200 million at 5 percent yields \$10 million per year. The impacts of inflation must be considered. The investment could be managed locally by the principal steward or another responsible party to ensure appropriate use of the interest income. In the event of a major

stewardship failure requiring large unanticipated expenses, federal intervention would still be required.

Incremental Accumulation Trust Fund. An endowment fund could be set up with a nominal contribution, perhaps by a state. Then remediation decisions would include estimates of annual stewardship costs, and funds would be deposited to cover the costs of future stewardship needs. Once the fund is established, its operation would be the same as if it originated from a lump sum, but incremental attainment of an adequate endowment might be politically easier than obtaining a lump sum.

The Present System: The agency responsible for the contamination, DOE in this case, retains financial responsibility for funding the stewardship program. The present system has the advantage of continuity and the legal responsibility for remediation; however, is forever subject to the pressures of the annual appropriations system.

Questions to Consider for this Core Topic Group

1. What is the appropriate role of the federal, state and local governments in assuring stewardship funding?
2. What is the appropriate role of the public in assuring stewardship funding?
3. To what degree should stewardship funding be assured by a complex-wide system as opposed to site-specific sources?

Long-Term Surveillance and Maintenance (LTSM) Program

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LTSM Program Background

- \$ LTSM Program established and assigned to GJO in 1988
- \$ Responsible for all postclosure activities (currently at 25 sites)
- \$ Types of sites include
 - UMTRCA Titles I and II
 - D&D (entombed reactors, etc.)
 - RCRA
 - CERCLA
 - NWPA



GJO
Grand Junction Office



LTSM Program Tasks

- \$ Technical
- \$ Administrative
- \$ Regulatory
- \$ Stakeholder Involvement
- \$ Records Management
- \$ Technology Transfer

GJO
Grand Junction Office



Mission

Fulfill DOE's responsibility to implement all activities necessary to ensure regulatory compliance and to protect the public and the environment from long-lived wastes associated with the nation's nuclear energy, weapons, and research activities



Lessons Learned

Cover Performance

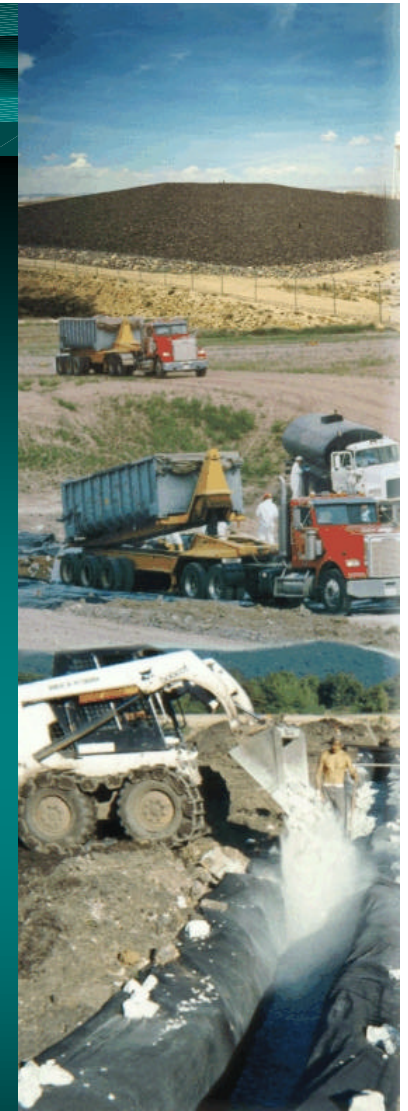
- \$ Disposal cell covers change with age
- \$ Design considerations for life of cover
 - Increase in cover conductivity
 - Degradation of cover materials
 - Natural succession of plants
- \$ Nature will win, don't fight it



Lessons Learned

Maintenance

- \$ DOE wastes are very long-lived
- \$ Life of cells is less than life of contaminants
- \$ Nature and people are creative destroyers
 - Signs, granite markers, and fences are challenges
 - Adjacent landowners may not respect property boundaries
 - Drought and precipitation cycles attack rock-hardened as well as vegetated sites



Lessons Learned

Surveillance Plan

- Defines responsibilities of long-term custodian
- Specifies required monitoring of site surface conditions
- Specifies required ground-water monitoring
- Describes final site (as-built) conditions
- Outlines contingency actions and emergency responses
- Required by regulation at some sites and a good tool at all sites



Lessons Learned

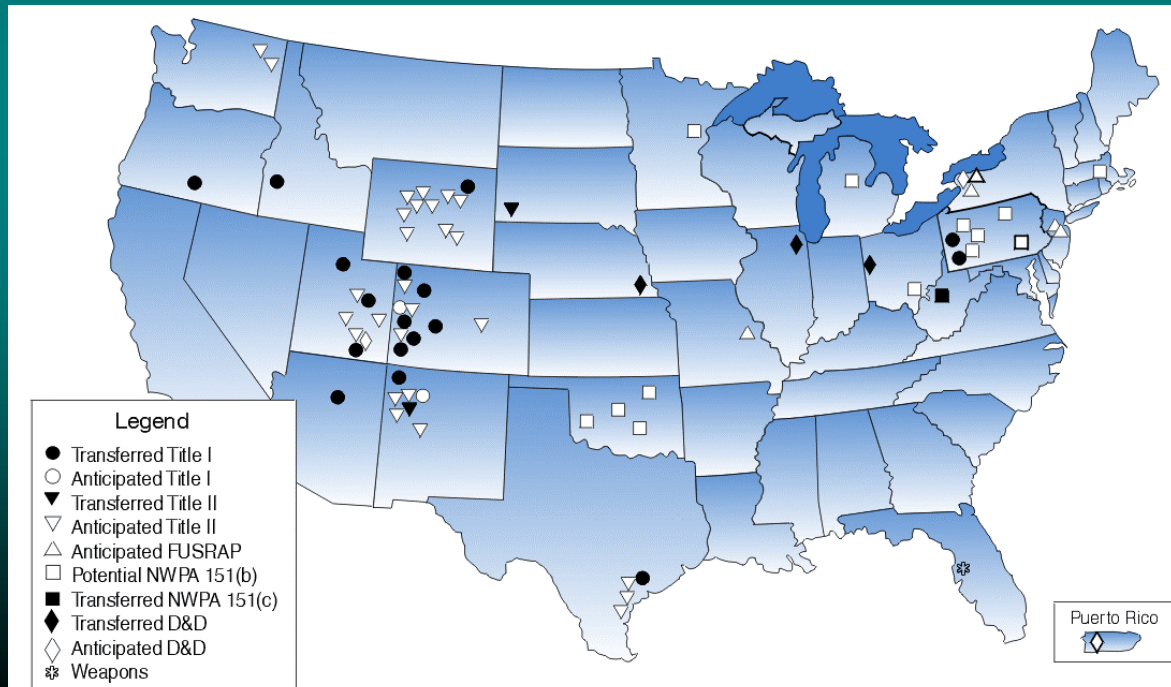
Records Management

- \$ Follow National Archives and Records Administration requirements
- \$ Provide for electronic retrieval
- \$ Include site history and legal descriptions
- \$ Support FOIA and litigation requests
- \$ Share technical expertise



LTSM Program Approach

- \$ Develop site-specific stewardship plan
- \$ Develop transition plan
- \$ Implement plan and transfer site to GJO



GJO
Grand Junction Office



Level of Stewardship Commensurate With Site-Specific Requirements

- \$ UMTRA annual inspections and reporting;
no DOE on-site presence
- \$ Pinellas/Monticello: operate pump and treat
(one federal FTE and local contractor support)
- \$ Site A/Plot M: use M&O contractor
(Argonne National Laboratory) to monitor site



Long-Term Surveillance Plan

- Defines responsibilities of long-term custodian
- Specifies required monitoring of site surface conditions
- Specifies required ground-water monitoring
- Describes final site (as-built) conditions
- Outlines contingency actions and emergency responses
- Required by regulation at some sites and a good tool at all sites



GJO As a Resource

\$ Experienced stewardship technical staff

- Geology, hydrology, botany, and range science
- Radiological health and safety, records management, and land use planning
- Civil, chemical and mechanical engineering
- Project management and stakeholder relations

\$ Recent support supplied to

- Pantex: records assessment
- West Valley: stakeholder relations
- Rocky Flats: stewardship cost estimate
- Oak Ridge: information resource



The PEIS Settlement Agreement Long-Term Stewardship Study

Jim Werner

Director of Strategic Planning and Analysis
Office of Environmental Management



October 28, 1999

Oak Ridge, Tennessee

TOPICS

- Background on Long-Term Stewardship (see Oct. 26 briefing)
- Chronology of PEIS Litigation
- December 1998 Settlement Agreement
 - Elements
 - Status
- Long-Term Stewardship Study for PEIS Settlement
- Relationship to Other Activities
 - Congressional Report (National Defense Authorization Act - NDAA)
 - Office of Long-Term Stewardship

Background on Long-Term Stewardship*

- 109 “sites” Expected to Require Long-Term Stewardship
- Approximately Half of Site Cleanups Already Complete (as of 1998)
- Numerous Activities Initiated by DOE Headquarters, Field, & Stakeholders
- Several critical issues identified by DOE, States, Indian Tribes, local governments, SSABs, EMAB, STGWG, NGA, NAAG, and other stakeholders
- Need to integrate issues with ongoing decisions, and research and development efforts

*See Oct. 26, 1999 Briefing

Chronology of PEIS Litigation

1988	Notice of Intent to Sue
1989	Lawsuit Complaint Filed on Need for PEIS
1990	Stipulation and Order
1991-1994	Workshops, 23 Scoping Hearings, Contractor Studies
1995	DOE Modifies Scope to Focus on Waste Management Issues
1996	Draft PEIS Published
1997	Final PEIS Published
1997	Lawsuit Complaint Filed on Adequacy of PEIS
1998	Settlement Agreement

December 1998 Settlement Agreement - Elements

1. Central Internet Database
 - Waste, contaminated media (e.g., water, soil, sediment), SNF, MIN, and facilities
 - Limited to available site data
 - Public participation in development
2. Long-Term Stewardship Study
3. \$6.25 Million Citizen Monitoring and Technical Assessment
 - For eligible organizations to procure technical expertise to review EM activities
 - Any nonprofit, NGO, or tribal organizations group eligible
 - RESOLVE selected as “Administering Organization”

See Attachment 1 for specific text from Settlement Agreement for LTS Study

December 1998 Settlement Agreement - Status

1. Central Internet Database
 - Specific data elements dictated by Settlement Agreement
 - Stakeholder Forum held June 1999
 - Draft web page design provided to plaintiffs September 1999
 - Expected: “Beta Version” (Dec. 1999) & Operational Version (March 2000)
2. Long-Term Stewardship Study
 - *Federal Register* Notice Published October 6, 1999
 - Initiated research on issues
3. Citizen Monitoring and Technical Assessment
 - RESOLVE designated - January 1999
 - First allocation (\$1.25 million) provided to RESOLVE - February 1999
 - FY2000 Appropriations (Energy and Water bill) allocates \$5 million

Long-Term Stewardship (LTS) Study for the PEIS Settlement Agreement

- Objectives
- Schedule
- Scoping
- Public Comment on the Draft
- Issues

LTS Study Objectives

- Inform decision-makers and the public about the LTS issues and challenges and potential options for addressing them.
- Describe DOE's LTS responsibilities; the status of current and ongoing LTS obligations, activities and initiatives; and the plans for future activities.
- Analyze the national issues that DOE needs to address in planning for and conducting LTS activities.
- Promote information exchange on LTS among DOE, Tribal nations, state and local governments, and private citizens.

Note that the Study will NOT:

- Be a National Environmental Policy Act (NEPA) document or its functional equivalent.
- Identify or address site-specific issues, except as examples in the context of presenting national issues.
- Address issues specific to nuclear stockpile stewardship, other activities related to national security, or the Central Internet Database required by the Settlement Agreement.

LTS Study Schedule

- NOI published in *Federal Register* on October 6, 1999
- Background Document *From Cleanup to Stewardship* published October 1999
- 90-day public scoping period (October 6, 1999 - January 4, 2000)
- Scoping workshop in Oak Ridge, TN on October 28, 1999
- Draft Study by March 2000
- Public comment period - Spring 2000
- Final Study following public comment period - End of 2000

DOE is pursuing opportunities to involve the public in the study and the scoping process. These will include existing forums and entities, such as the Environmental Management Advisory Board, Site-Specific Advisory Boards, and State and Tribal Governments Working Group, and other stakeholder organizations examining issues which relate to issues to be examined in the study.

LTS Study Requirements: Scoping

- With respect to public scoping, DOE is required to:
 1. Have an open process for determining the scope of issues to be addressed and for identifying the significant issues.
 2. Publish a notice of intent in the Federal Register.
 3. Invite the participation of affected federal, state, and local agencies; any affected Indian tribe; the proponent of the action; and other interested persons.
 4. Determine the scope and the significant issues to be analyzed in depth ("scope" refers to connected, cumulative, and similar actions; reasonable alternatives including the no action alternative; and direct, indirect, and cumulative impacts (see 40 CFR 1508.25)).

How to Provide Scoping Comments

- Preferred means of submitting scoping comments is electronically at:
www.em.doe.gov/lts
- By mail to:
Steven Livingstone
Project Manager
U.S. Department of Energy
P.O. Box 45079
Washington, D.C. 20026-5079
- By fax at:
202-586-4314

LTS Study Requirements: Public Comment

- With respect to public review of the draft study, DOE is required to:
 1. Provide a public comment period no less than 45 days beginning when the agency publishes a notice of availability in the *Federal Register*.
 2. Hold at least one public hearing that must be announced at least 15 days in advance.
 3. Prepare a final study following the public comment period and hearing(s) on the draft study, responding to comments received on the draft.
 4. Use appropriate means to publicize the availability of the draft and final study and the time and place for public hearing(s) on the draft.

Long-Term Stewardship Study for PEIS Settlement

- Address national and cross-cutting institutional and programmatic issues
- Not site-specific issues
- Follow CEQ/DOE NEPA process for public involvement
- Not a NEPA document

Potential Issues

1. *Relationship of “Cleanup” Decision Process to Long-term Stewardship Needs* – how to better integrate consideration of long-term stewardship needs and requirements in waste management, facility decommissioning, and remedial action decision-making processes?
2. *Development of Site-specific Long-term Stewardship Plans* – when are they needed; what should they include; how to coordinate development among sites; how to revise and update them?
3. *Funding Mechanisms* – how much funding will be required; financial obligations of federal, state, and local governments; what will and will not be paid for; when are payments made and funds obligated; adequacy of the annual appropriation model for long-term stewardship?
4. *Regulatory Drivers, Negotiated Agreements, and Legislative Barriers* – to what extent do existing regulatory requirements address long-term stewardship needs and requirements (are additional regulations needed?); how to better integrate consideration of long-term stewardship issues in planning processes (e.g., NEPA documents)?

Potential Issues (cont'd.)

5. *Information Management* – what information will be required; how will it be preserved and made accessible; how should information be provided to federal, state, and local officials and to the general public; what entities will be responsible for information management?
6. *Relationship of Facility Development Planning to Long-term Stewardship Needs* – how to better integrate consideration of long-term stewardship needs and implications in decisions to site, build, and operate a new facility?
7. *Science and Technology Development* – how to ensure periodic re-examination of existing end states and long-term stewardship activities to apply new science and technology; how to focus science and technology development on long-term stewardship needs?
8. *Institutional Controls* – appropriate entities (organizations, individuals) to ensure that long-term stewardship occurs; role of state and local governments at federal sites; long-term viability of existing institutional control mechanisms; variability among state and local laws and authorities?

Potential Issues (cont'd.)

9. *Purpose of Long-term Stewardship* – maintaining status quo or reassess site condition and remedy?
10. *Property Transfer Policies and Procedures* – what obligations and restrictions will convey to future site owners and tenants; what are the mechanisms by which property transfers from federal to non-federal (public or private) entities; role of the federal government after property transfers; variability among state and local property laws; criteria for deciding which property can be transferred?
11. *Land Use/Natural Resources* – how to integrate on-site and off-site land use planning; how to balance preservation of site assets (e.g., natural or cultural resources, infrastructure) with long-term stewardship needs; how to meet treaty obligations with Tribal governments during cleanup and long-term stewardship?
12. *Risk Management* – relationship between short-term risk reduction achieved by remedial actions vs. long-term risks during stewardship; potential conflicts between economic benefits of site redevelopment and risks to onsite workers/visitors; how to evaluate and manage risks over multiple generations?
13. *Intergenerational Transfer* – what mechanisms and institutions are appropriate means to ensure transfer of long-term stewardship information and responsibility to future generations?

Relationship to Congressional Report

- Congress directed DOE* to prepare a report on existing and anticipated long-term stewardship responsibilities for DOE sites or for those portions of sites for which environmental restoration, waste disposal, and facility stabilization is expected to be completed by the end of the calendar year 2006.
- The report is to include a description of sites and the long-term stewardship responsibilities that would be required at those sites, along with available cost estimates
- DOE must submit this report by October 1, 2000.

* *FY2000 National Defense Authorization Act (See Attachment 2)*

NDAA Report Requirements

- Describe sites (whole and geographically distinct locations), as well as specific disposal cells, contained contamination areas, and entombed contaminated facilities that cannot or are not anticipated to be cleaned up to standards allowing for unrestricted use.
- Identify the LTS responsibilities that would be required at each site, including soil and groundwater monitoring, record keeping, and containment structure maintenance.
- Provide estimates of annual or long-term costs for LTS activities in those cases where DOE has reasonably reliable estimates.

See Attachment 2 for the specific text from the Settlement Agreement pertaining to the LTS study

NDAA Report Data Needs from Field Offices

- Description of properties that cannot or are not anticipated to be cleaned up to standards allowing for unrestricted use:
 - Sites (whole and geographically distinct locations)
 - Specific disposal cells
 - Contained contamination areas
 - Entombed contaminated facilities
- Data regarding long-term stewardship responsibilities:
 - Soil and groundwater monitoring
 - Record keeping
 - Containment structure maintenance
 - Costs (annual or long-term)

PEIS Settlement Language

DOE will prepare a study on its long-term stewardship activities. By "long-term stewardship," DOE refers to the physical controls, institutions, information and other mechanisms needed to ensure protection of people and the environment at sites where DOE has completed or plans to complete "cleanup" (e.g., landfill closures, remedial actions, removal actions, and facility stabilization). This concept of long-term stewardship includes, *inter alia*, land-use controls, monitoring, maintenance, and information management. While DOE's study on long-term stewardship will not be a NEPA document or its functional equivalent, DOE will, nevertheless, follow the procedures set forth in the regulations of the President's Council on Environmental Quality (CEQ) for public scoping, 40 C.F.R. § 1501.7(a)(1)-(2), and the procedures set forth in DOE's NEPA regulations for public review, of environmental impact statements (and DOE (not EPA) will publish a Notice of Availability in the Federal Register, as set forth in 10 C.F.R. § 1021.313(a); and (b) DOE will not include any Statement of Findings as set forth in 10 C.F.R. § 1021.313(c). In the study, DOE will discuss, as appropriate, alternative approaches to long-term stewardship and the environmental consequences associated with those alternative approaches.

NDA Report Language

The conferees direct the Secretary of Energy to provide to the Armed Services Committees of the Senate and House of Representatives, not later than October 1, 2000, a report on existing and anticipated long-term environmental stewardship responsibilities for those Department of Energy (DOE) sites or portions of sites for which environmental restoration, waste disposal, and facility stabilization is expected to be completed by the end of calendar year 2006. The report shall include a description of what sites, whole and geographically distinct locations, as well as specific disposal cells, contained contamination areas, and entombed contaminated facilities that cannot or are not anticipated to be cleaned up to standards allowing for unrestricted use. The report shall also identify the long-term stewardship responsibilities (for example, longer than 30 years) that would be required at each site, including soil and groundwater monitoring, record keeping, and containment structure maintenance. In those cases where the Department has a reasonably reliable estimate of annual or long-term costs for stewardship activities, such costs shall be provided. The Secretary shall attempt to provide sufficient information to ensure confidence in the Department's commitment to carrying out these long-term stewardship responsibilities and to undertake the necessary management responsibilities, including cost, scope, and schedule.

The conferees recognize that in many cases residual contamination will be left after cleanup or will be contained through disposal, and that such residual contamination and wastes will require long-term stewardship to ensure that human health and the environment are protected.



EPA's National Perspective on Long-Term Stewardship

Jim Woolford, U.S.

EPA/OSWER

Federal Facilities Restoration and Reuse Office

SSAB Workshop on Stewardship

Oak Ridge, TN October 26, 1999



What is long-term stewardship (LTS)?

- The federal government's ongoing, affirmative obligation to the public:
 - Acceptance of responsibility
 - Willingness to ensure continued protection of human health and the environment



Long-term stewardship:

- Encourages and rewards responsible environmental management
- Enforces the law against those who do not act responsibly
- Involves understanding and appreciating a broad range of perspectives
- Takes responsible action on behalf of future generations



EPA's LTS goal

- Our goal for long-term stewardship is to protect human health and the environment for current and future generations



LTS components

- Understanding ecological concepts
- Building an awareness of environmental issues and values
- Developing scientific investigatory and critical thinking skills
- Strengthening learning skills needed for effective action



End result

- Development of community-based solutions to environmental challenges
- Protection of human health and the environment for current and future generations



Meeting the challenges of LTS

- Requires a broad view and the ability to fuse a range of diverse competencies into an appropriate plan of action



Competencies

- Finding and evaluating information
- Listening well and understanding multiple perspectives
- Having a broad view and bridging gaps to bring diverse/opposing groups together
- Obtaining a consensus perspective on the proper path forward
- Planning and taking appropriate action



Elements of LTS

- Site monitoring and maintenance
- Application and enforcement of institutional controls
- Environmental monitoring
- Information management



An LTS program involves:

- In-place closure
- Use of long-term institutional controls
 - Complement and support cleanup activities
 - Limit development/restrict public access
 - Are usually, but not always, legal controls



Partnering for LTS

- Successful stewardship requires a long-term commitment of resources from a wide range of partners



Partnering for LTS

- Federal, state, and local governments
- For profit and non-profit organizations
- Public and private groups
- Tribal governments
- Environmental advocacy groups
- Environmental justice communities
- Economic redevelopment agencies



What are the next steps?

- Resource allocation
- Building partnerships (local and national levels)
- Continued education for all parties
- Evaluation research (increased knowledge and accountability)
- Legislation



Implementing LTS

- EPA issuance of draft IC policy for contaminated federal property transfer
- EPA IC manual
- Site closeout process guide (DoD, Army, Navy, Air Force, EPA)
- Region 4 land use control policy
- EPA Region 10 final policy on ICs



Implementing LTS (cont'd)

- Navy policy memorandum on land use controls
- Study of Decision Processes Related to Long-Term Disposition of DOE Waste Sites
- DoD's Guide to Establishing ICs at Closing Military Installations



IC policy:

- Establishes measures to ensure effectiveness of ICs
- Ensures that RCRA and CERCLA decisions remain protective
- Remains applicable even after property is transferred to private ownership



AFBCA initiative:

- Developing institutional controls strategy
 - IC implementation, monitoring, and enforcement
- Strategy designed to be a “living process”



LTS challenges

- Fort McClellan, AL & Jefferson Proving Ground, IN
 - Former Army bases transferred to U.S. Fish & Wildlife Service
 - Contain unexploded ordnance, are characterizing the nature and extent of contamination
 - Protection for threatened species
 - Managed site access



DOE land transfer

- Pinellas Plant, Largo, FL
 - First major DOE facility returned to a local community
 - Transferred to the Pinellas Co. Industry Council in March 1995
 - Complete remediation expected by 2014
 - Represents effective transitioning from weapons production to commercial use



DOE land transfer (cont'd)

- Grand Junction Mill Tailings Site, Grand Junction, CO
 - All surface contaminants removed from processing site in 1994
 - Site restoration activities completed in August 1994
 - Final disposal from all sites expected to be completed in 2023



LTS issues and challenges ahead

- Creating an enduring LTS program
- ICs vs. full-scale cleanup
- New technologies
- Parties charged with LTS responsibility must have the bureaucratic, political, and financial capabilities to successfully implement a viable LTS program

Long-term stewardship is more than a strategy for land management: it is a guiding principle of environmental restoration



Stewardship and Remedy Selection

Components of Remedy Selection

The main decisions that must be made to determine how clean is clean and the remediation technology.

Land Use Decisions

- What is the expected future use of the property?

Risk Level Decisions

- What is the acceptable level of residual risk?
- What risk models and assumptions will be used?

Technology Decisions

- What technology will be used to achieve the desired risk and future use levels?

Stewardship Technology Requirements

The components of stewardship that are required to ensure the remedy selection decisions are enforced and remediation integrity maintained.

- Institutional controls
- Access controls

- Research

- Access controls
- Monitoring
- Maintenance of physical controls

Stewardship Integration

Activities required to ensure stewardship is effectively implemented.

- Funding
- Information
- Education
- Public Involvement

Stewardship Enforcement

Activities required to ensure stewardship is maintained over time.

- CERCLA 5 year reviews
- Regulatory and public oversight

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Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

November 1, 1999

Dr. Carolyn L. Huntoon
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Dear Dr. Huntoon:

As the host of the 1999 SSAB Workshop on Stewardship, the Oak Ridge SSAB is pleased to present to you the enclosed *Next Steps for Stewardship*.[®] These ten statements represent the results of a two-day workshop held in Oak Ridge on October 26 and 27. Over 100 stakeholders from around the DOE complex attended the workshop, including approximately 50 members of SSABs from nine DOE sites. During our two days of discussions, we were provided information from DOE, US EPA, states, and other stakeholders regarding the current status of stewardship planning and implementation throughout the DOE complex. As a result of this learning and in-depth discussions on the issue, the participants developed the enclosed ten statements to identify some of the most important issues facing us today in the development and implementation of effective stewardship.

These statements represent the consensus opinions of the participants at the workshop. The limitations of the workshop prevent them from being highly detailed or representing a complete list of stakeholder concerns, but they do capture many of the key issues that were identified during the workshop. These statements are a product of the individual input of the participants of the workshop and are not in any way a consensus of the SSABs whose members participated. Should any SSABs choose to endorse these statements or any portion thereof, they will provide you that information directly.

We want to take this opportunity to thank the Department of Energy for its support and participation in the workshop and hope that you will give serious consideration to the issues and concerns expressed in the enclosed statements. If you will respond directly to the Oak Ridge SSAB, we will be sure that all participants are provided with your reaction to these statements as well as any action the Department takes to bring them about.

Sincerely,

Steven H. Kopp, Chair

Enclosure

Cc:

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