

1.6 A Conceptual Framework for an LTS S&T Roadmap

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Abstract

The Idaho National Engineering and Environmental Laboratory (INEEL) has been chartered to identify Science and Technology (S&T) needs for Long Term Stewardship of Department of Energy contaminated sites. This also includes identifying capabilities, or technologies which address these needs. That is, identifying those technologies that can reduce risk, cost, uncertainty, or improve reliability of Long Term Stewardship tasks. They will also coordinate and manage a research and development program to address needs which aren't being addressed. The execution of these needed S&T activities will involve participation of other DOE laboratories, academia, and industry. An initial needs assessment and technology baseline inventory was completed during FY 2000. In addition, a conceptual framework for a Long Term Stewardship science and technology roadmap was prepared. This presentation covers findings of the needs identification task, the available technology survey, and plans to develop the science and technology roadmap.

Strategy for Implementing a Long-term Stewardship Science and Technology Program

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Stewardship

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 closure, remedial actions, removal actions, and facility stabilization). This concept of long-term stewardship includes land-use controls, monitoring, maintenance, and information management.

Stewardship includes:

- ***Ensuring that EM missions are completed and maintained to satisfy CERCLA, RCRA, and other legal drivers using a site-wide perspective***
- ***Ensuring current and future missions do not limit future options, negatively affect cultural resources, and existing ecological integrity, and***
- ***Maintaining and/or restoring ecological integrity and cultural resources in "undisturbed areas"***

Long-term Stewardship Organization

- ***HQ Office of Long-term Stewardship***
- ***INEEL - Long-term Stewardship Science and Technology Lead Laboratory***
- ***Grand Junction***
- ***Site Landlords***

EM Long-term Stewardship Science and Technology Mission

Use scientific resources to reduce costs and improve remedy and mitigation reliability and predictability during Long-Term Stewardship of DOE sites.

Objectives of EM Long-term Stewardship Science and Technology Program

- ***Identify and address LTS needs***
- ***Promote an understanding of LTS needs within the S&T community***
- ***Respond to user needs and stakeholder interests***
- ***Use existing processes and programs***

Technical Approach

- ***Perform a focused needs assessment***
 - ***Preliminary assessment completed -***
<http://emi-web.inel.gov/lts>
 - ***Validate and expand preliminary needs***
- ***Establish inventory of available LTS technologies***
 - ***Inventory ongoing S&T where LTS needs are being addressed with existing R&D efforts***
- ***Expand to an Interagency R&D inventory***

Preliminary Needs

- ***Cost effective methods for long-term monitoring and surveillance***
- ***End state planning***
- ***Knowledge of fate and transport mechanisms and predictive capabilities***
- ***Engineering solutions for permanent control of residual contamination and waste left in place***
- ***Strong cost estimating tools for LTS***
- ***Tools for the management of information for future generations***
- ***LTS engineering of future projects***

Technical Approach-Long Term

- ***Institutionalize a process for identifying and addressing LTS S&T needs***
- ***Integrate LTS activities with Focus Areas and Cross Cuts through Multi-Year Program Plans***
- ***Link LTS related S&T to EM life-cycle work scope through the Project Baseline Summaries (PBSs)***
- ***Establish LTS Model Programs***

Where are we now?

- ***Initial needs assessment done - under review - <http://emi-web.inel.gov/its>***
- ***S&T Program baseline being developed***
- ***S&T status document and roadmap framework to be completed by 12/31/00***
- ***For more information contact Kevin Kostelnik at (208)526-9642 or KVK@inel.gov***

Where we go from here

- ***Organize Roadmap Team***
 - ***Identify, Select and “Commission” Participants***
 - ***Executive Committee***
 - ***Workgroups***
 - ***Stakeholders***
- ***Define the Roadmap Boundaries***
 - ***Timeframe***
 - ***Scope and Goals***