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Records, Knowledge and Memory for Near-Surface Disposal

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Waste Management 14 – Panel Session 114, Phoenix, Arizona

March 6, 2014

SRNL-MS-2014-00026

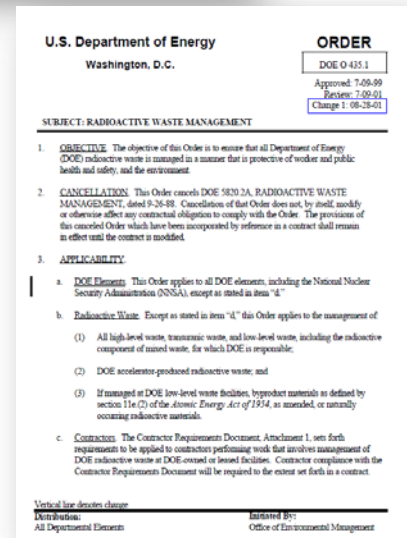
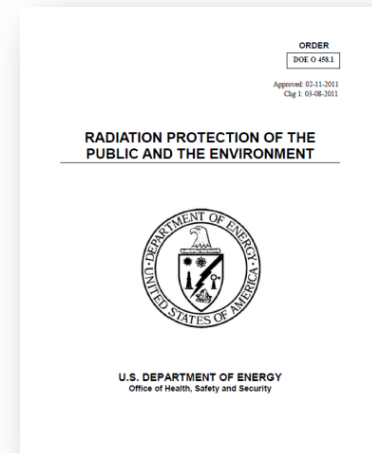
Objective

- Provide a brief overview of approaches for Records, Knowledge and Memory as applied for near-surface disposal
 - Regulatory Framework
 - Centralized oversight and commitment to controls
 - Preserving memory and knowledge
 - Consideration of unplanned lapse of controls



Regulatory Framework (Disposal)

- DOE near-surface disposal is conducted in accordance with DOE requirements and may also be overseen by a State and/or the US EPA
- DOE Order 458.1, Radiation Protection of the Public and the Environment – includes dose standards and requirements for release of facilities (no time limit)
- DOE Order 435.1, Radioactive Waste Management – includes requirements for development and operation of LLW disposal facilities
- CERCLA and RCRA Subtitle C can be involved for disposal of waste from remediation activities
- Closed facilities are transferred to DOE – Office of Legacy Management



Department of Energy – Office of Legacy Management (DOE-LM)

Anticipated Legacy Management Sites Through Fiscal Year (FY) 2020



Institutional Controls

Example Policies

U.S. Department of Energy
Washington, D.C.

POLICY
DOE P 454.1

Approval: 4-9-03
Certified: 1-25-11

SUBJECT: USE OF INSTITUTIONAL CONTROLS

PURPOSE AND SCOPE:

This Policy delineates how the Department of Energy (DOE), including the National Nuclear Security Administration, will use institutional controls in the management of resources, facilities and properties under its control and to implement its programmatic responsibilities. The Policy will guide site-specific and programmatic decisions on DOE's own planning, maintenance and implementation of institutional controls, and address responsibilities related to DOE's role as a steward of Federal lands and properties, and identify activities that DOE needs to accomplish.

DOE uses a wide range of institutional controls as part of efforts to:

- appropriately limit access to, or uses of, land, facilities and other real and personal properties;
- protect the environment (including cultural and natural resources);
- maintain the physical safety and security of DOE facilities; and
- prevent or limit inadvertent human and environmental exposure to residual contaminants and other hazards.

The purpose of this Policy is to ensure that DOE programs:

- reaffirm a DOE-wide commitment to use institutional controls effectively;
- establish a consistent approach to the implementation, delegation, documentation, maintenance and reevaluation of institutional controls as an integral part of mission and operational activities;
- integrate the use of well-designed, effective, and reliable institutional controls with other tools to manage, monitor, a control; and
- apply institutional controls to maintenance institutional e

The Office of Environment, Safety and Health (OESH) is responsible for the implementation of this Policy, and DOE line management including center director and lead program is responsible for ensuring that such as budget, chief information officer, chief financial officer, chief personnel officer, and related directives.

DISTRIBUTION:
All Departmental Elements

Institutional Controls in RCRA & CERCLA Response Actions

August 2000

United States Department of Energy
Office of Environmental Policy and Guidance
RCRA/CERCLA Division (EH-413)



ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of February 21, 2014

Title 40: Protection of Environment
PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES
Subpart G—Closure and Post-Closure

§264.117 Post-closure care and use of property.

(a)(1) Post-closure care for each hazardous waste management unit subject to the requirements of §§264.117 through 264.120 must begin after completion of closure of the unit and continue for 30 years after that date and must consist of at least the following:

(i) Monitoring and reporting in accordance with the requirements of subparts F, K, L, M, N, and X of this part; and

(ii) Maintenance and monitoring of waste containment systems in accordance with the requirements of subparts F, K, L, M, N, and X of this part.

(2) Any time preceding partial closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular unit, the Regional Administrator may, in accordance with the permit modification procedures in parts 124 and 270,

shorten the post-closure care period applicable to the hazardous waste management unit, or disposal units have been closed, if he finds that the reduced period is sufficient to protect to the environment (e.g., leachate or ground-water monitoring results, characteristics of hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-uses indicate that the hazardous waste management unit or facility is secure); or

extend the post-closure care period applicable to the hazardous waste management unit or finds that the extended period is necessary to protect human health and the environment if or ground-water monitoring results indicate a potential for migration of hazardous waste which may be harmful to human health and the environment).

Regional Administrator may require, at partial and final closure, continuation of any of the requirements of §264.14 during part or all of the post-closure period when:

1. Hazardous wastes may remain exposed after completion of partial or final closure; or

2. Exposure of the public or domestic livestock may pose a hazard to human health.

At partial or final closure use of property on or in which hazardous wastes remain after partial or final closure, if never be allowed to disturb the integrity of the final cover, liner(s), or any other part of the containment system, or the function of the facility's monitoring systems, unless the Regional Administrator finds that the disturbance:

1. Is necessary to the proposed use of the property, and will not increase the potential hazard to the property or to the environment; or

Implementation

LMS/FE/00490-7.0
Revision 7.0 Final

Fernald Preserve, Fernald, Ohio

Comprehensive Legacy Management and Institutional Controls Plan

Volumes I and II

January 2014

U.S. DEPARTMENT OF ENERGY Legacy Management

DOERL-2001-41
Revision 5

Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

U.S. DEPARTMENT OF ENERGY
Office of Environmental Policy and Guidance
P.O. Box 366
Richland, Washington 99352

DOE/O-11542
revision 1

Approved by Public Release,
Further Dissemination Authorized

INL Site-Wide Institutional Controls, and Operations and Maintenance Plan for CERCLA Response Actions

April 2012



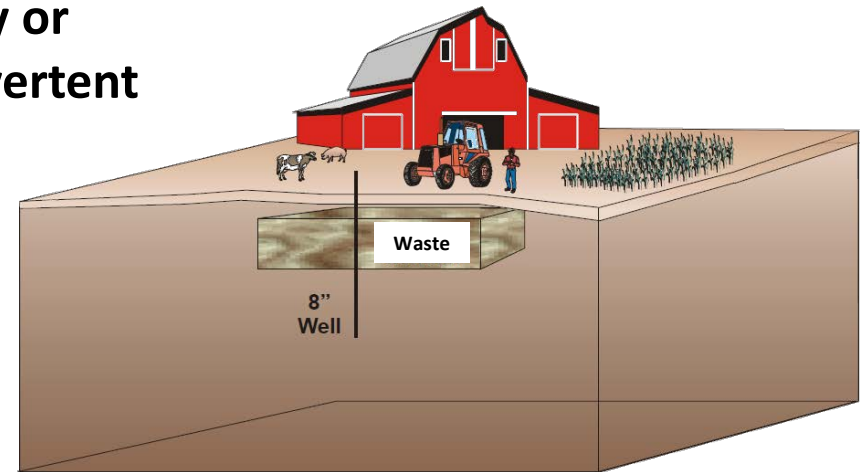
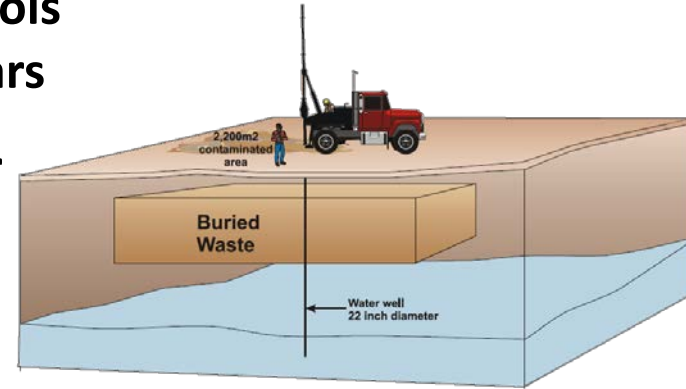
Memory and Knowledge

- DOE-LM provides oversight for closed disposal facilities as part of its overall responsibilities
- Active public outreach at DOE sites
- Commitments for active institutional controls as long as site cannot be released
- Visitor Center
- Deed restrictions
- ...



Practical Considerations for Disposal Facilities

- Although highly unlikely, for the purposes of a performance assessment, institutional controls are generally assumed to lapse after 100 years
- Longer-term credit can be taken with proper justification, but this is unusual
- Inadvertent intrusion is assumed to be a possibility immediately after lapse in institutional controls
- Measures can be employed to delay or preclude the impacts of some inadvertent intrusion scenarios



Summary

- DOE has a robust system for long-term control of disposal facilities, including external regulation for some facilities
- DOE-LM provides centralized oversight of closed disposal facilities as part of responsibilities for numerous legacy sites
- Institutional controls are required to be maintained until site can be released
- Assessments are conducted with the assumption that there will be a lapse in controls at 100 years (longer times can be justified)



Questions

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