An Overview of the Navy LUC Program

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Presentation Overview

- **Introduction to LUCs**
- LUC Life Cycle
- Site Closeout Documentation
- Wrap Up

Key Points

- RPMs should be familiar with DON LUC principles
- LUCs may be integral elements of the remedial strategy
- Life-cycle costs for LUC implementation should be carefully considered in Feasibility Studies
- NIRIS LUC Tracker tool can be a useful management tool for RPMs
- RPMs need to know the DON Site Closeout documentation process

Definitions

- Land use controls (LUCs)
  - Engineered or physical controls (Engineering Controls or ECs)
  - Administrative or legal mechanisms (Institutional Controls or ICs)
  - Protect human health and the environment from residual contamination at environmental restoration (ER) sites
- LUCs are appropriate when a site cannot support unrestricted use and unlimited exposure (UU/UE)
- The DON defines LUCs as both ICs and ECs; however, regulatory agencies are taking a vigilant look at ICs to make sure they remain protective

Engineering Controls

- Engineering Controls (ECs) consist of engineering measures designed to minimize the potential for exposure to contamination by either limiting direct contact with contaminated areas, reducing contamination levels, or controlling migration of contaminants through environmental media
- ECs include:
  - Fences
  - Signs
  - Guards
  - Landfill caps
  - Slurry walls
  - Pump and treat of groundwater
  - Monitoring wells

Institutional Controls (ICs)

- Institutional Controls (ICs) are administrative and/or legal mechanisms that are designed to minimize the potential for human exposure to contamination by limiting land or resource use and/or by providing information to help modify or guide human behavior at the site
- ICs include:
  - Affirmative and negative easements
  - Affirmative and restrictive covenants
  - Consent decrees
  - Notices/advisories
  - Zoning
  - Permits
  - Educational materials

IC Categories

- Governmental Controls
  - Usually implemented and enforced by a state or local government
  - Can include zoning restrictions, ordinances, statutes, building permits, or other provisions that restrict land or resource use at the site
- Proprietary Controls
  - Generally create legal property interests that restrict or affect the use of property, relying on legal instruments placed in the chain of title for the property
- Enforcement and Permit Tools
  - Include permits, administrative orders, and consent decrees
  - Enforceable by a state if state enforcement tools are used
- Informational Devices
  - Provide information about risks from contamination and are not legally enforceable
  - Examples include deed notices, state registries of hazardous waste sites, LUC tracking systems, and advisories

- Ask the class for examples of each at their own sites

BRAC or Transferring Property Issues

- DON has a perpetual interest in ensuring that LUCs remain viable and are honored by all subsequent owners
  - CERCLA 120(h)(3)(A)(ii) and P.L. 102-484 (Sec. 330)
- DON must ensure subsequent owners are equally bound to LUC requirements (Liability Concern)
- LUC requirements/responsibilities may be included in Environmental Condition of Property (ECP) documents
- Site boundaries and conditions, terms, and limitations of LUCs must be described in Findings of Suitability to Transfer (FOSTs) and recorded in deeds
- Restrictive Deeds will contain requirements for subsequent owners to report viability of LUCs annually to the DON

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- CERCLA Sec. 120(h)(3)(A)(ii) and Sec. 330 of P.L. 102-484, DON must indemnify transferees against response costs, personal injury and property damage attributable to DON contamination. By ensuring the specified restrictions remain viable, DON exposure to liability is reduced.

- All deeds must contain the environmental covenant "all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of transfer" (the CERCLA 120(h)(3)(A)(ii)(I) Covenant) and that "any additional remedial action found to be necessary after the date of the transfer shall be conducted by the United States." EPA, with the concurrence of the Governor of the State in which the facility is located, may defer the CERCLA Covenant for parcels of real property at facilities listed on the NPL.

ICs – Layering

- Implement LUCs with legal instruments where necessary and then use internal Navy policy to enhance as needed
- Often institutional controls are most effective when more than one are in place, they are layered or implemented in series (use multiple controls at the same time)
- Example:
  - To restrict land use, the site manager may issue an enforcement tool (Administrative Order); obtain an easement; initiate discussions with local governments about a potential zoning change; and enhance future awareness of the restrictions by recording them in a deed notice and in a state registry of contaminated sites

- Emphasize the need for LUCs to be put in place to only cover the areas of a site that must have LUCs but do not overdo it
- Enforce larger areas with internal Navy policy on an as needed basis (easier to get out of later, and more cost effective)

LUCs and Master Planning

- RPMs must work with Planners, Asset Management, Public Works, and Capital Improvements to ensure awareness is present about LUC sites
  - Where they exist
  - Restrictions present
  - Potential impact to planned projects
  - Plans for Future Land Use
- For transferred property, mandate (document) that the new property owner keeps LUCs intact
- Focus on the warfighter

- Focus on the warfighter – remind the audience that the whole purpose for the RPM is to provide that indirect support to the warfighter (protect their dependents from contamination living on the installations, the schools, etc.; another idea would be to stress the importance of UU/UE when feasible for training operations, new facilities, etc.)

- Simply trying to make the point that one of the RPM's main focal points should be to remediate sites ultimately for future use by the warfighter

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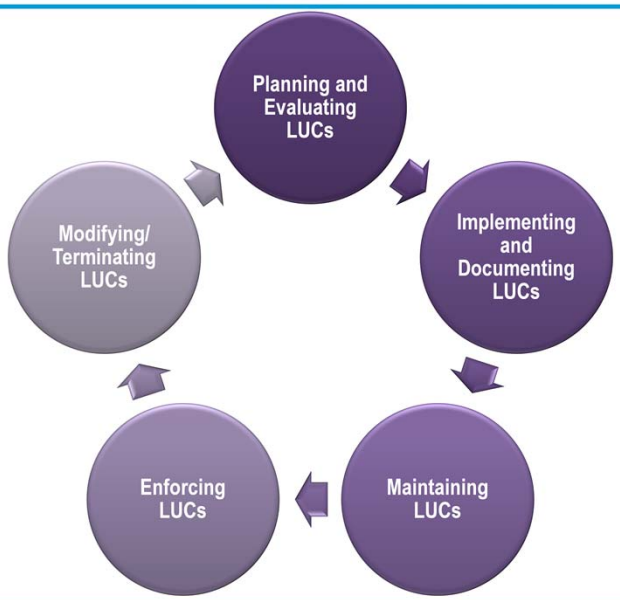
Typical LUC Life Cycle



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LUC Planning: When to consider LUCs?

- Consider LUCs as an alternative early on in Site Management
- LUCs must be carefully considered and analyzed during the Feasibility Study (FS)
- During the FS, remedial alternatives are evaluated and compared based on the NCP 9 Criteria:
  - Overall protectiveness
  - Compliance with ARARs
  - Long-term effectiveness and permanence
  - Reduction of toxicity, mobility, or volume through treatment
  - Short-term effectiveness
  - Implementability
  - Cost
  - State acceptance
  - Community acceptance

LUC Planning: Feasibility Studies

- "Feasibility Studies that consider a remedy requiring a LUC shall include the costs of implementing and maintaining the LUC, as well as an evaluation of an "unrestricted use" alternative." (*DoD Policy on LUCs Associated with Environmental Restoration Activities, Jan. 17, 2001*)
- "Life cycle costs of LUCs should be considered when analyzing and selecting remedies to ensure all parties have a full understanding of the costs and responsibilities for remedial alternatives." (*DON Environmental Policy Memorandum 99-02; Land Use Controls*)
- Life cycle costs include all costs required to achieve Site Closeout

LUC Planning: Cost Factors

Planning Documentation	• Record of Decision (ROD) • Remedial Design (RD) • Negotiations/Meetings • Notices
Implementation	• Modify Base Master Plan (cost to installation, not ER,N eligible) • Regional Shore Infrastructure Plans (cost to installation, not ER,N eligible) • Permits, deeds, ordinances, signs, fences, etc.
Monitoring and Enforcement	• Periodic monitoring/site visits • 5-Year Reviews • Notices, guard services/security
Modification and Termination	• Explanation of Significant Difference (ESD) or ROD Amendment • Remedial Action Completion Report (RACR)

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- Reviewing NORM site data, it is important to emphasize the fact that if you look at the LUC Life Cycle, you are spending money over the long haul using LUCs as the remedial alternative, it appears that spending 10-25K on LUCs per year per site for the foreseeable future is relatively common within NORM across the board just to maintain LUCs and inspect them once they are put in place.

LUC Implementation: "Principles" of Efficiency and Cost Effectiveness

- Based upon the Principles developed by EPA and DON:
  - LUCs are specified, implemented, monitored, reported on, and enforced efficiently and cost-effectively to ensure long-term protectiveness
  - Given equally protective technologies, the more cost-effective technology will be considered by EPA

LUC Implementation: "Principles" – Roles

- EPA acknowledges that ***DON is the Federal Lead Agent*** for response actions
- DON acknowledges EPA's role for regulatory oversight and enforcement at NPL sites
- EPA maintains ultimate ability to select the remedy at NPL sites if it disagrees with DON's proposed remedy and dispute resolution fails
- Need to work together to reach a solution

LUC Implementation: "Principles" – Federal Facilities Agreements (FFAs)

- FFAs are CERCLA 120 agreements used by DON and EPA to describe roles and relationships in detail
- FFAs contain installation-specific details and procedures for planning, budgeting, and dispute resolution
- DON and EPA desire FFAs to be standardized and relatively static (i.e., should not need to be changed for a given installation)

- Not all Navy Sites operate under an FFA, so this only applies to those that do

LUC Implementation: "Principles" – Primary Documents

- Developed under the FFA
  - Relatively dynamic and action-oriented
  - Document important plans and actions
- Example 1
  - A Site Management Plan is revised yearly by DON/EPA RPMs and is an important tool for planning response actions and demonstrating commitment to the public
- Example 2
  - A LUC Remedial Design (RD) describes actions needed to ensure viability of both long-term ECs and ICs

- Both docs are simply examples of Primary Docs

LUC Implementation: Records of Decision (RODs) and LUC Remedial Design (RD)

- RODs should document the remedy selection process and decision in accordance with CERCLA and the NCP
- Should document appropriate guidance, regulations, standards, criteria, and policy
- Describe remedial action ***objectives***
- If required, additional response actions and their objectives will be documented in an Explanation of Significant Difference (ESD) or a ROD Amendment
- LUC RD will then explain why and for what purpose LUCs are necessary, where they will be necessary, and the entities responsible for implementing, monitoring, reporting on, and enforcing the LUCs

LUC Implementation: Actions

- LUC RD will describe implementation actions and responsibilities to ensure viability of the remedy
- Implementation Actions include all actions to implement, operate, maintain, and enforce the remedy including:
  - Conducting 5-Year Reviews
  - Periodic monitoring or visual inspections
  - Notifying regulators of any changes at the site or of LUC failures
  - Map of the site where LUCs are to be implemented

LUC Implementation: Objective vs. Actual LUC

- LUC Objective – No exposure to waste
- Actual LUC – Ensure no construction on, excavation of, or breaching of the landfill cap

LUC Implementation: Objective vs. Actual LUC (cont.)

- LUC Objective – Ensure no residential use or residential development of this property to meet RAO of no exposure
- Actual LUC – Deed Restriction

LUC Implementation: Objective vs. Actual LUC (cont.)

- LUC Objective – Ensure no withdrawal and/or use of groundwater
- Actual LUC – Use various ICs and ECs to prevent GW use

Photo courtesy U.S. Navy

LUC Implementation: Objective vs. Actual LUC (cont.)

- LUC Objective – Ensure no excavation of soils without a use permit and special handling procedures
- Actual LUC – Fences, signs, use permits, etc.

Photo courtesy U.S. Navy

LUC Implementation: Summary of Key Points

- Records of Decision (RODs) should describe the RAOs
- The Remedial Design (RD) will describe the implementation actions, operation, maintenance, and enforcement actions for LUCs
  - RD describes LUC and the LUC Objective
  - LUC Objectives
    - Linked to the RAO

LUC Implementation: LUC RD

- There is a sample LUC RD template available for use
- Format is concise and effective:
  - Background
  - Site Description and History
  - LUC Objectives and Discuss the LUC Instrument
  - LUC Control Implementation Actions
  - Figures: Location Map, Site LUC Boundary Map
  - Acronym List
  - Site LUC Inspection Checklist

- Some of the Checklist questions are worded so that a 'Yes' response would indicate a problem or issue. You can't just look down the row of 'Yes' or 'No' checkmarks and assume checkmarks in the 'Yes' column indicate a positive situation.

- Note successful template use examples at Yorktown, Naval Station Norfolk, Naval Station Newport, etc.

LUC Maintenance: Site LUC Inspection Checklist

OU2- Paradise Creek Disposal Area
Norfolk Naval Shipyard, Portsmouth, Virginia

Description: OU2 consists of Sites 3, 4, 5, 6, and 7. Site 3 includes the Eastern and Western Landfill Areas. Site 4 and 6 were used for chemical storage and disposal. Site 5 was a former oil reclamation area. LUC Inspections are only for Sites 3 through 6 and exclude Site 7.

	General	Yes	No
1	Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose		
2	Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section, and notify activity coordinator. Indicate if IDW is properly labeled, per example below Investigative Derived Waste Purge water from *Site ID* *Date* Do not handle, analysis pending Contact *Name* NNSY IR Coordinator, *Phone Number*		
3	Is the area free of miscellaneous debris? If no, mark location of miscellaneous debris on figure, note its condition in the comment section, and notify activity coordinator.		
4	Is the area free of stressed vegetation or free of other identifiable concerns with regards to this site? If no, annotate these concerns in the comments section, mark location of concern on map, and notify activity coordinator.		
	Site Specific		
	If any answers below are 'No', annotate concerns in the comments section, mark location of concern on the map, and notify Activity Manager.		
5	Are site groundwater monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing)		
6	Are site gas vents and probes, as depicted on the figure, in good condition? (i.e. damaged protective posts and/or vent risers)		
7	Is fencing properly maintained and gates being secured effectively?		
8	Are perimeter signs in good condition, visible, legible, and properly secured? Are contacts and phone numbers up to date?		
9	Are there any signs of settling, instability, or erosion such as ponding of water, sinkholes, gullies, undercutting, raveling, scouring, etc. anywhere on the soil cover, side slopes, riprap embankments, shoreline, Main Access Road, or Maintenance Roads?		
10	Are there any signs of drainage structures being impeded such as obstruction, sedimentation, or erosion to culverts, ditches, swales, or channels?		

Comments: (Provide related question number for each comment)

- LUC Inspections are done via contract support and /or by Navy personnel

LUC Maintenance: NIRIS LUC Tracker

- Provides key LUC information, reports, and maps allowing anyone in NAVFAC to run queries and obtain specific LUC data for a site
- Helps to notify stakeholders of when inspections are due, helps track the status and completion of inspections, and provides a search tool for data mining and information retrieval
- Provides easy access to LUC data for RPMs, efficient tracking of LUC integrity and compliance, and standard formats for interoperability between FECs and contractors
- RPMs are responsible for managing LUC information but may get support from the NIRIS Regional Data Manager or local workgroup member

- Build and maintain records of all land use controls to:
    1. KEY POINT OF SLIDE: The LUC Tracker provides a continuity of data, in case of a retirement, transfer to a new job, etc.
    2. Prevent the loss of Land Use Control information even as personnel transition from job to job;
    3. Provide confidence to regulators and other legal personnel that LUCs are maintained by the Navy through use of LUC Tracker.

LUC Maintenance: NIRIS LUC Tracker (cont.)

Photos courtesy U.S. Navy

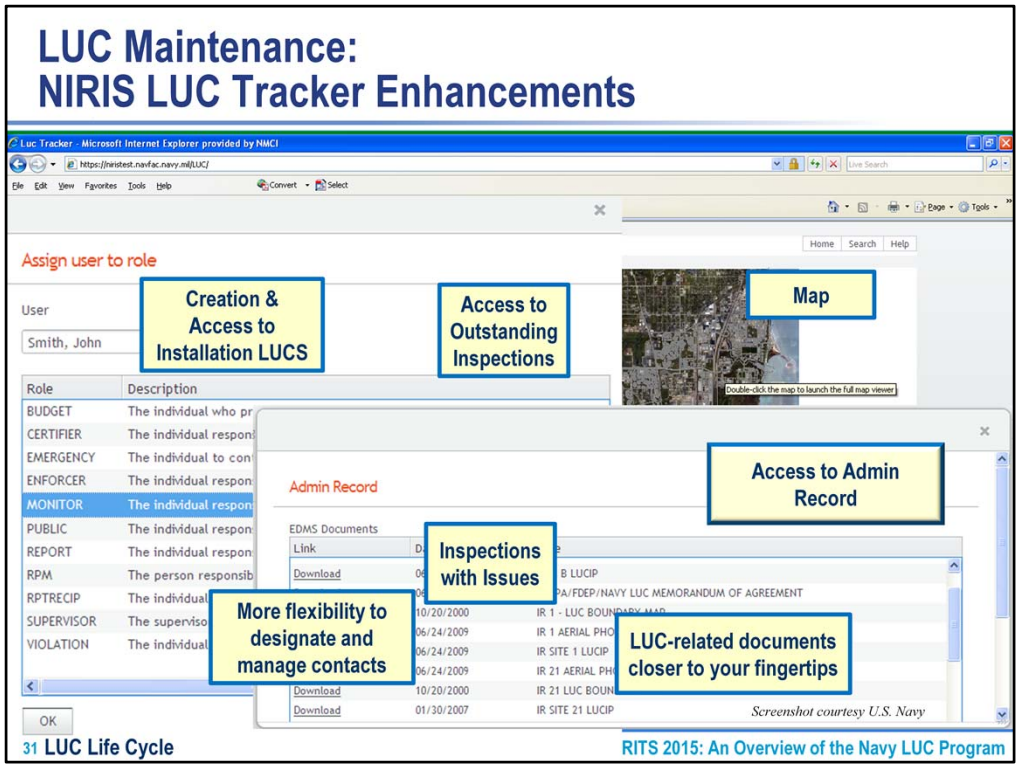
Key Point

The LUC Tracker demonstrates to all stakeholders that the Navy has a transparent and systematic approach in place to manage LUC sites

- Administratively, it allows all authorized NAVFAC support personnel to corporately access LUC information

- Operationally, it makes it easier for the user to:
    1. Manage LUC information
    2. Store and track inspection status and records
    3. Maintain and access LUC documents
    4. Assign contact information for a variety of LUC personnel

- Authorized support personnel:
    1. Base folks
    2. RPMs
    3. Headquarters
    4. ER Managers



- Basic functionality is still present... however… the business interface has been redesigned for what should be an easier experience… there's only enough time to touch on some of the feature enhancements you'll see in the current LUC Tracker.

- For those of you with LUCs in NIRIS… be sure to go in and make sure all of your information is up to date. If you have LUCs but haven't set them up yet… it's a lot easier to get the information in there than it was in the older version.

- Descriptions of Pop Ups:
    1. Creation and Access to Installation LUCs: Create and access your LUCs.
    2. Access to Outstanding Inspections: Access and assign inspections for your LUCs.
    3. Map: This mini map illustrates spatial boundaries of LUCs.
    4. Inspections with Issues: See any deficient inspections here for your LUCs.
    5. LUC-related Documents at your Fingertips: Access to LUC-related documents for your LUCs.
    6. Access to Admin Record: Access your Admin Record related to your LUCs.
    7. More flexibility to designate and manage your contacts: You can now change your contact information within the tool without sending an email to get permission to change your contacts (2 clicks on slide).

LUC Enforcement: Violations and Failures

- DON should ensure LUCs and objectives are implemented, but if EPA discovers a LUC failure, they shall notify the installation
- Should there continue to be a failure to meet the objective, EPA may notify the Deputy Assistant Secretary of the Navy (Environment), who will ensure that appropriate action is taken
- EPA and DON will consult on the enforcement action if there is a failure by a subsequent owner or third party at a transferred property
- LUC violations are less severe and should be remedied at the RPM or installation level

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- Failure Example: Failure to prevent construction on a landfill cap or failure to prevent extraction of groundwater – talk about potential cost of the failure and how this is not often considered when estimating LUC Life Cycle Costs

- Violation Example: Missed a reporting deadline or didn't conduct an inspection

LUC Modification or Termination

- If site conditions change, it is important to note that your LUC boundary, LUC EC or LUC IC may need to be modified to address that change in site condition
- Examples – Vapor Intrusion, Emerging Contaminants, a portion of the site meets RAOs, etc.
- LUC Termination – RAOs have been met
- Site Closeout Documentation is discussed in the following section

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Key Site Closeout Documents

- Record of Decision (ROD) – describes the selected remedy and the reasons for selection based on the nine criteria in the NCP
- Remedial Design (RD) – provides the actual design of the remedy (RD) and plans for how the remedy will be staged and implemented
- Remedial Action Completion Report (RACR) – demonstrates the remedy has been completed for an operable unit (OU) and that all remedial action objectives have been met
- RPMs should prepare an I-RACR for each site that will have a prolonged Remedial Action Operation (RA-O) phase, to document the remedy is constructed and is operational and functional.
- Final RACR – Demonstrates the remedial action objectives (RAOs) have been met for all OUs at an installation

Key Site Closeout Documents (cont.)

- These documents are prepared by DoD and are the "primary documents" in the Site Closeout process
- The Five-Year Review is a key document when required
- Good Reference – "*Remedial Action Completion in the Navy's Site Closeout Process*" Fact Sheet (2014)

Remedial Action Completion Reports (RACRs)

- I-RACR will be prepared for long-term remedies
  - Anticipated that RAOs will be achieved, but will take a long time
  - Documents Remedy in Place (RIP) and Operating Properly and Successfully (OPS)
- RACR will be prepared for each OU
  - Shows that RAOs have been achieved
  - Documents Response Complete (RC)
- RACR is not required for "No-Action" determination
  - Decision is documented in the ROD or RI/FS

Final RACR

- When the last CERCLA site on an installation achieves RC, a final RACR is prepared
- Final RACR also summarizes all previous RACRs completed for the installation. This final RACR is the primary document supporting NPL delisting
- The EPA will use the final RACR to prepare the Preliminary Closeout Report (PCOR) or the Final Closeout Report (FCOR) for NPL delisting

Preliminary and Final Closeout Reports (PCOR/FCOR)

- **Final RACR documents that all remedial actions are completed**
  - **Final RACR is prepared by the Navy**
- **EPA may prepare PCORs and FCORs for their own reporting requirements**
  - **PCOR**
    - Documents Construction Completion milestone
  - **FCOR**
    - Prepared prior to delisting from the NPL

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Policy and Guidance

- *Close Out Procedures for National Priorities List Sites*, OSWER Directive 9320.2-22 (May 2011) http://www.epa.gov/superfund/programs/npl_hrs/closeout/index.htm
- *Land Use in the CERCLA Remedy Selection Process*, OSWER Directive No. 9355.7-04 (May 25, 1995) http://www.epa.gov/superfund/community/relocation/landuse.htm
- *BMS B-9.9.7, Land Use Control Management*
- DON Policy Memorandum 99-02 *Land Use Controls, Interim Final*; *Policy and Land Use Controls Associated with Environmental Restoration Activities*; and *Monitoring and Enforcement of Land Use Controls*
- DON *Guidance to Documenting Milestones throughout the Site Closeout Process*, the *DoD/EPA Joint Guidance on Streamlined Site Closeout and NPL Deletion Process for DoD Facilities*
- NAVFAC *Implementation of the LUC Tracker* (5090 Ser 11009/ENC-RS)
- EPA Memorandum, OSWER Directive 9355.6-12, dated January 4, 2013, Sample Federal Facility Land Use Control ROD Checklist with suggested language (LUC Checklist)
- Secretary of Defense memorandum, dated January 16, 2004, CERCLA Record of Decision (ROD) and Post-ROD Policy

Summary

- **Key points:**
  - **LUCs are integral to the remedial design/strategy**
  - **LUC total Life Cycle costs must be considered during the Feasibility Study**
  - **DoD and EPA agreed to LUC implementation principles in October 2003**
    - RODs indicate RAOs
    - RDs indicate specifics for LUC objectives and implementation
  - **LUCs should be used when cost-effective and/or when "UU/UE" land use is technically infeasible**
  - **NIRIS LUC Tracker Tool demonstrates sound LUC Program Management**
  - **Requirements for Site Closeout documentation**
  - **NPL Deletion: EPA responsible for all documentation**