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Current Decommissioning Issues

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Staff Analysis of Decommissioning Regulations

- NRC LTR implemented in 1997
- In 2003, NRC staff undertook a comprehensive assessment of the LTR
- Nine issues identified and examined
- Staff recommendations for resolving these issues documented in a paper submitted to the Commission (SECY-03-0069)





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Analysis Approach

- **Broad purpose**
 - Facilitate decommissioning at existing sites
 - Reduce future decommissioning problems
- **Considered lesson learned and information from others**
- **Integrated analysis and plan**
 - Identified interrelationships among issues
 - Integrated plan of actions (rulemaking, guidance)





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Summary of Key Issues

- Restricted release and institutional controls
- Relationship between the LTR release limits and other release limits
- Measures to prevent future legacy sites
- Realistic exposure scenarios





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Restricted Release/Institutional Controls

- **Issue: Difficulties arranging institutional controls required for restricted release**
 - **Governments/Tribes unwilling to accept ownership of private sites due to liability concerns**
 - **Lack of independent third party and long-term continuity**
 - **Long-term effectiveness of institutional controls**



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Restricted Release/Institutional Controls

- **Recommendation: Clarify the LTR risk-informed, graded approach for restricting use**
 - **Risk framework**
 - Hazard level (dose without institutional controls)
 - Likelihood of hazard occurrence (hazard duration)
 - Lower risk: < 100 mrem/yr OR short term
 - Higher risk: > 100 mrem/yr OR long term
 - **Grades**
 - Two general grades
 - Lower risk: legally enforceable (e.g., deed restrictions)
 - Higher risk: legally enforceable and durable (e.g., government ownership or control)
 - Specific grades: flexibility to balance site-specific factors



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Restricted Release/Institutional Controls

- **Outcomes**
 - Provide more effective restrictions that will protect public health and safety over long term
 - Provide a new option for institutional controls
 - Make LTR restricted release and alternate criteria provisions more available
 - Should increase public confidence in restricted release





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Restricted Release/Institutional Controls

- **New option of NRC long-term control (LTC) license after completing remediation**
 - All 10 CFR 20.1403 requirements must be met
 - LTC license conditions act as the legally enforceable and durable institutional control similar to EPA permits or orders and Ohio's decommissioning possession-only license
 - License conditions would address land use restriction, maintenance, monitoring, reporting
 - Flexibility tailored to site-specific factors



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Relationship Between the LTR Release Limits and Other Release Limits

- **Unimportant quantities**
- **Separate uranium and thorium standards**
- **On-site disposal**
- **Controlling the disposition of solid materials**





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Unimportant Quantities

- **Issue:** Unclear relationship between LTR unrestricted release criteria and unimportant quantities (0.05 wt %) in 10 CFR40.13(a)
 - Exempt from regulation if source material less than 0.05wt%
 - Criterion for entry into regulation NOT criterion for license termination
- **Outcomes:** Describe appropriate relationship, and clarify that 10 CFR40.13(a) should not be used as a decommissioning criterion



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On-site Disposal

- **Issue: 10 CFR 20.2002 does not establish a clear standard for approving on-site disposals; Agency discretion for case-by-case**
- **Outcome: Clarify appropriate standard**
 - **Continue the current practice of using a “few millrem” for approving onsite disposals. Permit requests up to 100 mrem/yr along with additional financial assurance for eventual decommissioning**





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Controlling Disposition of Solid Materials

- **Issue: Unclear relationship between LTR's 25 mrem/yr for unrestricted release and existing guidance of a few mrem/yr for controlling disposition of solid materials. Potential removal of residual contamination from an unrestricted release site**
- **Outcome:**
 - **Different purpose, scope, and type of materials**
 - **ALARA, mixing would reduce dose from offsite use**
 - **LTR is protective if materials are removed after license termination**
 - **Analyze off-site use scenarios**



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Changes to Financial Assurance Prevent Future Legacy Sites

- **Issue: Financial risks could cause shortfalls in decommissioning funding**
 - Underestimation of costs
 - Accidental release increase costs
 - Inadequate financial disclosure
- **Outcome: Make regulatory changes so future sites will have adequate decommissioning funding**
 - Staff approval of Decommissioning Funding Plan
 - Re-evaluate cost estimate and fund amount when indicators occur
 - Property damage insurance
 - Certification of financial statements



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Changes to Licensee Operations Prevent Future Legacy Sites

- **Issue: Licensee Operational risks could cause decommissioning problems**
 - Chronic releases to subsurface over time
 - Late identification of contamination and extent
 - Existing regulations/guidance are not specific
- **Outcome: Make changes to rules/guidance to minimize contamination**
 - Existing licensees should minimize contamination through procedural changes
 - Focus licensee monitoring/reporting on high risk of subsurface contamination
 - Focus staff inspections on high risk sites and operations



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Realistic Scenarios

- **Issue:** Clear direction and guidance are needed for selecting realistic exposure scenarios for both unrestricted release and restricted release without institutional controls
- **Common perception:** LTR requires licensees to use residential-farmer scenario





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Realistic Scenarios

- **Options evaluated**
 - **Continue current approach with additional emphasis on current flexibility**
 - **Allow scenarios based on reasonably foreseeable land uses (next few decades to possibly 100 years)**
- **Recommendation: use reasonably foreseeable land uses**



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Realistic Scenarios

- **Outcomes**
 - More economical decommissioning, while maintaining safety
 - Fewer restricted release sites





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Integrated Decommissioning Improvement Plan (IDIP)

- Plan regulatory improvements to address nine issues with the LTR
- Capture lessons learned for future decommissioning
- Address finality/state consistency issues
- Develop a communication strategy
- Other program management improvements



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IDIP Products and Schedule

- Regulatory Issue Summary (RIS) – 3/04
- Decommissioning public workshop – 4/05
- Webpage/brochure – 9/05
- Revised inspection and enforcement guidance – 9/05- 9/07
- Revised decommissioning guidance – 9/06
- Rulemaking to prevent future legacy sites – 9/07



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IDIP Outcomes

- Ensure that the Decommissioning program is risk-informed
- Implement greater flexibility in the NRC's regulations
- Increase efficiency and improve timeliness of regulatory reviews
- Document, preserve, and take advantage of lessons learned