

**NUREG-1757, SUPPLEMENT 1:
SUMMARY OF PUBLIC COMMENTS
AND PRELIMINARY PLANS TO REVISE GUIDANCE**

CONTENTS

INTRODUCTION 1

1. REALISTIC SCENARIOS 3

2. INTENTIONAL MIXING OF CONTAMINATED SOIL 4

3. REMOVAL OF MATERIAL AFTER LICENSE TERMINATION 5

4. ONSITE DISPOSAL OF RADIOACTIVE MATERIALS 6

5. ENGINEERED BARRIERS 7

6. RESTRICTED USE AND INSTITUTIONAL CONTROLS 9

INTRODUCTION

NRC staff has been developing guidance for the License Termination Rule (LTR) Analysis issues and other issues, to include in the next revision of NUREG-1757, “Consolidated NMSS Decommissioning Guidance.” As part of this guidance development, the staff discussed the key issues and obtained stakeholder input on these issues at the NRC staff’s Decommissioning Workshop, held April 20, 2005, in Rockville, Maryland. The staff met with the NRC’s Advisory Committee on Nuclear Waste (ACNW) on June 15, 2005, to obtain early input from the ACNW working group on key issues. In September 2005, the staff published for public comment NUREG-1757, Supplement 1, “Consolidated NMSS Decommissioning Guidance: Updates to Implement the License Termination Rule Analysis.” The staff received public comments, and the staff is currently developing responses to the comments and planning changes to finalize the guidance. The staff will meet with the ACNW on March 22, 2006, to obtain additional input from the ACNW working group on the public comments and potential path forward for addressing comments and finalizing the guidance.

The staff has developed summaries of the more substantive public comments and preliminary plans for finalizing the guidance for each key issue, which are provided in the following sections. These summaries are being provided to ACNW in advance of the March 22, 2006, working group meeting to facilitate preparation for the meeting. The summaries only reflect the staff’s attempt to highlight the significant public comments that question the policies reflected in Supplement 1 or that may result in changes to the policies in the guidance. The staff does not intend these summaries to address all comments received. In particular, we do not discuss those comments that are primarily editorial or that suggest simple clarifications to the guidance.

In finalizing the guidance, the staff will consider all the public comments received, and staff will prepare responses to all the comments received. The public comments are provided separately to the ACNW and are available in ADAMS.

It should be noted that the preliminary plans to revise the guidance reflect only the staff's thoughts at this time, are not staff positions, and do not reflect NRC policy. Therefore, the plans for revising the guidance are not for use at this time by licensees or by NRC staff for current casework. The planned revisions and the approaches in the guidance may change with additional consideration of the issues, including feedback from the ACNW working group. The staff plans to share the results of the public comments with the Commission by June 2006. NRC staff will continue to work on finalizing the guidance and plans to issue the final guidance in September 2006.

The NRC staff notes that the discussion of comments related to restricted use and institutional controls is longer than that for other issues. This is because more comments, and more significant comments, were submitted on aspects of restricted use and institutional controls.

1. REALISTIC SCENARIOS

Summary of Draft Guidance

NRC staff revised sections of NUREG-1757, Vol. 2 (specifically, Chapters 5.3 and 5.4, Appendix I.3, and Appendix M) to incorporate the revised policy on the use and basis of scenarios for demonstrating compliance with the License Termination Rule (LTR) in 10 CFR Part 20, Subpart E. The revised policy allows the licensee to base their compliance scenarios on the “reasonably foreseeable land use” for the next 100 years. In addition to submitting a compliance scenario, licensees using this option should include analyses of unlikely land uses to provide the agency a robust analysis to make an informed risk management decision.

Summary of Public Comments and Staff Considerations

Three States (Colorado, New Jersey, and New York) and two private organizations provided comments on the revised guidance.

Some public comments supported the policy change to “reasonably foreseeable land use” as the basis for compliance. The other comments can be responded to by revising the guidance accordingly, without changing the policy, as stated in SECY-03-069.

A couple comments indicate that there may be confusion about the difference between the time frame for establishing the scenario and the time frame for the dose analysis to demonstrate LTR compliance. The staff is considering providing additional explanation to clarify the different time frames.

One comment questioned whether sites using “reasonably foreseeable land use” should be unrestricted use sites, or whether, consistent with U.S. Environmental Protection Agency (EPA) approaches, deed restrictions or other controls should be used to limit the land use to only the assumed “reasonably foreseeable land use.” The staff acknowledges that EPA approaches may differ from NRC’s intended implementation of “reasonably foreseeable land use.” The staff plans to include more discussion in the guidance on why such controls are not needed and how the evaluation of unlikely land uses helps ensure that significant exposure would not occur if land uses, other than the assumed “reasonably foreseeable land use,” were to occur in the future.

2. INTENTIONAL MIXING OF CONTAMINATED SOIL

Summary of Draft Guidance

NRC staff prepared a new Section 15.13, "Use of Intentional Mixing of Contaminated Soil," for inclusion in NUREG-1757, Vol.1, Rev. 1. Staff provided guidance on using mixing of contaminated soil to meet the waste acceptance criteria (WAC) of disposal facilities. Guidance is also provided on the use of mixing of contaminated soil to meet the LTR release criteria, in limited circumstances, on a case-by-case basis. The guidance addresses the limitations for when intentional mixing to meet the LTR can be used and the minimal requirements for when NRC may consider accepting such a proposal. The draft guidance describes the information that must be included in a decommissioning plan or license termination plan, to support the use of intentional mixing.

Summary of Public Comments on Draft Guidance

Three State government agencies (Colorado, New Jersey, and New York), one licensee (Connecticut Yankee), one public interest group, and one industry consultant provided comments. New York questions the need for some of the options and limitations in the guidance and opposes specific circumstances. They have specific changes they suggest to the guidance, based on these oppositions. New Jersey supports the use of intentional mixing and provides additional information on their policy on the use of mixing. Colorado opposes the use of intentional mixing and has several specific comments on the guidance. The public interest group supports the use of mixing to meet WAC, is "less comfortable" with the use of mixing where contamination would be left in place, and fully opposes the use of clean materials. The industry consultant suggested three changes that would add some flexibility and clarification to the guidance, consistent with specific items addressed by the Commission in their vote sheets on SECY-04-0035.

Staff Considerations

The staff believes that comments from the public interest group, the State of New Jersey, and Connecticut Yankee can be acknowledged and may not require proposing any guidance changes. The staff plans a few minor additions to the guidance to address the Colorado comments. The initial thinking of the staff is to disagree with the New York comments, and staff does not plan to change the guidance in response. Staff proposes to add the flexibility and clarifications proposed by the industry consultant because the final decision on allowing the mixing, even with more flexibility, will remain a case-by-case, risk-informed decision, protective of public health and the environment.

3. REMOVAL OF MATERIAL AFTER LICENSE TERMINATION

Summary of Draft Guidance

NRC staff proposed a substantial revision of NUREG-1757, Vol. 2, Appendix G, Section G.1.1, "Structures Versus Equipment." The draft guidance clarifies for licensees and NRC staff what building structure materials may be left onsite at license termination, and what radiological criteria should apply to this material. The revised guidance also provides three acceptable approaches to determine what materials may be left in buildings at license termination.

In addition to revising Appendix G, Section G.1.1, the staff revised Section G.3, "References," to reflect the new references in Section G.1.1, and added new text to be inserted in Section 15.11.1 of Vol 1, Rev. 1, to provide information about the current approaches to releases of solid materials.

Summary of Public Comments on Draft Guidance

Comments on the draft guidance were received from the State of Colorado and the State of New Jersey. Both comments dealt with clarification of the three acceptable approaches provided to determine what materials may be left in buildings at license termination. Neither State expressed opposition to the proposed draft guidance.

Staff Considerations

The staff is considering the comments, but initial plans are that the current draft was clear, and the staff does not plan to revise the draft guidance.

4. ONSITE DISPOSAL OF RADIOACTIVE MATERIALS

Summary of Draft Guidance

NRC staff prepared a new Section 15.12, "Onsite Disposal of Radioactive Materials Under 10 CFR 20.2002," for inclusion in NUREG-1757, Vol. 1, Rev.1. Three options for approving onsite disposals were proposed: (1) continuing use of a "few millirem" per year dose criterion (to be defined as no greater than 5 mrem/y); (2) allowing dose up to 100 mrem/y, provided additional financial assurance was available for remediation to unrestricted use criteria (or to restricted use criteria, if restricted use criteria could be met) at license termination; and (3) allowing disposal of mainly short-lived materials without additional financial assurance for remediation, provided that the 25 mrem/y criterion could be achieved by license termination.

Summary of Public Comments on Draft Guidance

Four State government agencies (Colorado, New Jersey, New York, and Washington), two public interest groups, and one consultant provided comments.

The state agencies are generally opposed to any onsite disposal and believe that this policy is not consistent with the primary objective of preventing legacy sites. They are specifically opposed to implementing onsite disposal policy by guidance rather than rulemaking.

The rulemaking path is also supported by the public interest groups. One observes that financial assurance seems to be the principal focus to prevent legacy sites, and suggests that having adequate financial assurance may not preclude a legacy site or a restricted use site. The consultant suggests that the NRC staff proceed cautiously with prescriptive guidance where experience is lacking, because the guidance may have unexpected consequences.

The consultant raised concerns about the financial assurance guidance and about the appropriateness of developing guidance when accumulated experience is not available. These comments seem to have applicability to onsite disposal as well.

Staff Considerations

NRC staff is considering the comments received and the reasons for the opposition to the use of guidance for dealing with onsite disposal issues. NRC staff's current thinking is to agree with some of the reasons given in opposition to implementing Option 2 in the absence of rulemaking.

Staff has reviewed the NRC database for onsite disposals and is not convinced that any rulemaking efforts are warranted at this time. The staff believes that the doses for onsite disposal requests are unlikely to exceed the few mrem criterion proposed in Option 1, so further guidance or rulemaking may not be needed at this time. Initial staff plans are to modify the guidance to only provide Option 1 for onsite disposal (no greater than 5 mrem/y dose criterion), and to indicate that other options for onsite disposals will be considered on a case-by-case basis. Elimination of Options 2 and 3 would be a change from the LTR Analysis paper (SECY-03-0069) and the associated Staff Requirements Memorandum, so staff plans to discuss this in the forthcoming Commission paper.

5. ENGINEERED BARRIERS

Summary of Draft Guidance

NRC staff prepared an expansion to Section 3.5, "Use of Engineered Barriers," for inclusion in NUREG-1757, Vol. 2. The purpose of the revised guidance was to provide information to licensees who are considering the use of engineered barriers. Previous guidance was supplemented and modified to provide more detailed information on applying a risk-informed graded approach to: selecting engineered barriers; analyzing engineered barriers; and providing the technical basis for engineered barrier performance. Potential ranges of performance and degradation mechanisms that should be considered were provided.

Summary of Public Comments on Draft Guidance

Two State government agencies (Colorado and New Jersey), and three other groups provided comments. Two groups commented that the summaries of experience for various barrier types were not up-to-date. One agency stated that the summary of uranium mill tailings experience was not accurate. Two groups expressed opposition to the use of engineered barriers (e.g., passive) at unrestricted release sites. One agency requested examples of natural analogs, and one group expressed concern that the decommissioning regulations are less restrictive than the regulations in 10 CFR Part 40, Appendix A, although the materials and persistence of the hazard can be similar. One State agency expressed strong reservation about the 1000-year compliance period in the LTR. One agency commented that some barrier types were inappropriately favored over other types.

Staff Considerations

NRC staff is carefully considering the comments received on the use of engineered barriers at decommissioning sites. Staff preliminary plans to address the comments include the following.

- For the use of engineered barriers at unrestricted release sites, the staff plans to clarify the guidance to clearly express that this is not the favored regulatory approach, that it can be extremely challenging and costly to justify the passive performance of an engineered barrier, but that it is not prohibited by the current regulations.
- The staff believes the uranium mill tailings experience has demonstrated that long-term stability, from an erosion control perspective, can be achieved with minimal monitoring and maintenance. The staff plans to revise the guidance to provide a more detailed summary of uranium mill tailings experience and emphasize that the examples provided are primarily for long-term stability, and not necessarily infiltration control.
- The staff agrees that the summary of experience and potential ranges of performance can be enhanced and updated to reflect more recent experience. However, the staff have not yet decided the appropriate level of detail to provide in the guidance.
- The staff plans to provide examples of the use of natural analogs to support justification of the long-term performance of engineered barriers.

- The staff understands the comment about the differences between 10 CFR Part 20 and 10 CFR Part 40, Appendix A, for materials that would appear to have a similar hazard. The staff plans to respond to the comment to reflect that while 10 CFR Part 20 may not have the same requirements as 10 CFR Part 40, Appendix A, in the application of the LTR for sites with long-lived material, a similar level of requirements are imposed to ensure that public health and safety will be protected. Changes to the guidance may not be necessary.
- The staff plans to ensure that barrier types are not favored in the guidance, unless a clear basis can be provided to emphasize certain types of barriers over others. Staff plans to provide additional discussion of evapotranspiration covers and geosynthetics in the revision.
- The staff believes that the LTR compliance period was adequately addressed in development of the regulation. The staff plans to ensure the guidance adequately reflects that the uncertainty in projections is likely larger and projected performance of engineered barriers becomes harder to justify, as the time of performance becomes longer.

6. RESTRICTED USE AND INSTITUTIONAL CONTROLS

SUMMARY OF DRAFT GUIDANCE

NRC staff proposed revisions to Chapter 17 and Appendix M of NUREG-1757, Vol. 1, Rev. 1 to incorporate the Commission approved options related to restricted use and institutional controls and to include guidance on the risk-informed graded approach. The revised guidance includes descriptions of the two new “last resort” options for restricted use, with NRC long-term oversight: possession only license for long-term control (LTC) and a legal agreement and restrictive covenant (LA/RC). In addition, the staff provided additional guidance on advice from affected parties, total system approach for sustaining protection, and risk-informed long-term monitoring.

SUMMARY OF PUBLIC COMMENTS ON DRAFT GUIDANCE

A broad range of public comments were received and included several comments on perceived inconsistencies between the LTR and NRC’s regulations for low-level waste disposal and uranium mill tailings, as well as concerns about the existing restricted use provisions of the LTR. Staff plans on informing the Commission about these comments, but no changes to the guidance are being considered.

Most of the comments on the draft guidance addressed the LTC license option and a few addressed the LA/RC option and advice from affected parties. No comments were received on the risk-informed graded approach, total system for sustaining protection, or long-term monitoring.

KEY COMMENTS ON THE LICENSE TERMINATION RULE

Perceived Inconsistencies with other regulations

Comment: Some comments identify perceived inconsistencies between the NRC decommissioning guidance and NRC regulations for low-level waste disposal and uranium mill tailings disposal. The commenter stated that NUREG-1757 is not as stringent as standards in 10 CFR Part 40, Appendix A and creates a double standard for reclamation and disposal. Recommendations are made for a new reclamation and disposal standard to be added to the guidance, including processing materials as alternate feed at a licensed uranium mill or placing materials in an impoundment constructed in accordance with 10 CFR Part 40, Appendix A.

Staff considerations: The draft guidance in NUREG-1757 provides an acceptable method for implementing the LTR, which is the NRC regulation for decommissioning all NRC-licensed facilities other than low-level waste disposal facilities, regulated under 10 CFR Part 61, and uranium recovery facilities, regulated under 10 CFR 40, Appendix A. The comment may raise a broader issue concerning a consistent regulatory scheme for materials containing uranium and thorium, regardless of their source. However, the guidance cannot alter the standards in the LTR.

Duration of institutional controls/indefinite durability

Comment: One comment questioned the justification for the NRC to allow institutional controls to be durable indefinitely, especially in light of the low-level waste facility regulations, which state that institutional controls cannot be relied on for more than 100 years.

Staff considerations: The LTR approach to analyses of institutional controls assumes two cases: institutional controls in place and institutional controls have failed (not in place). Dose criteria must be met for both cases. The analysis of failure of institutional controls assumes failure at any time. This bounding approach to compliance helps overcome issues with determining or justifying the duration of institutional controls. The purpose of the Part 61, 100-year institutional control requirement is to provide protection for the time period needed for Class A and B waste to decay to acceptable levels. We are considering revising the guidance to explain the LTR approach and that it is not less conservative than the approach in the low-level waste disposal regulations.

Consistent analysis of institutional controls and engineered barriers

Comment: One comment suggested that analyses assuming institutional controls are not in place should also assume that engineered barriers are not in place.

Staff considerations: The staff does not plan to make changes to the guidance. In the West Valley Policy Statement, the Commission determined that under the LTR, engineered barriers are not institutional controls. Therefore, the analysis of institutional control failure would not assume that engineered barriers would also fail. Instead, consistent with NRC's draft guidance on engineered barriers, degradation of engineered barriers without active monitoring and maintenance would need to be analyzed, along with the possibility of an inadvertent intruder (because institutional controls would not be in place to ensure active monitoring and maintenance and to prevent an inadvertent intruder).

KEY COMMENTS ON PROCESS

Preference for rulemaking

Comment: Establishing the LTC license option is not appropriate for Commission policy and guidance and should be the subject of a rulemaking. Rulemaking is appropriate because this appears to be a significant change. Further, the LTC license would not be terminated in the usual sense, could require a NEPA review, should undergo more rigorous public scrutiny, and could lead to additional legacy sites.

Staff considerations: SECY-03-0069 evaluated both rulemaking and guidance and recommended that guidance was appropriate for the few sites that might consider using it. The Commission approved developing guidance, but with attention to obtaining stakeholder views and informing the Commission (Regulatory Issue Summary, stakeholder workshop, and future Commission paper on public comments). Consistent with NRC's decommissioning process, a NEPA review also would be done for a site that proposes the LTC license for restricted use. Staff plans to inform the Commission and recommend finalizing guidance.

KEY COMMENTS ON DRAFT GUIDANCE FOR LTC LICENSE

Support for LTC license

Comment: New York concurred with the concept of an LTC license and that when properly implemented, a LTC license can provide greater assurance. The LTC license is preferred over the LA/RC. ASTSWMO supports the use of a LTC license as a strong institutional control.

Lack of support for LTC license

Comment: New Jersey does not support the concept of the LTC license. New Jersey views the LTC license as long-term storage, not permanent disposal since it would not meet the criteria that the NRC has established for disposal facilities. The LTC concept differs from the approaches of low-level waste disposal and disposal of uranium mill tailings to avoid proliferation of small waste disposal sites and reduce perpetual surveillance obligations.

Proliferation of restricted use sites and future legacy sites

Comment: Some comments expressed concerns that the LTC license would lead to proliferation of restricted use sites.

Staff considerations: Staff plans to revise the guidance to emphasize that the LTC license is a last resort for restricted use sites, of which only a few are expected, and that NRC's ongoing rulemaking to prevent future legacy sites will also help prevent future restricted use sites.

LTC license should not provide a means for avoiding requirements

Comment: NRC should not offer options to licensees who cannot meet the LTR requirements. The LTC license should not provide a means for avoiding applicable license requirements.

Staff considerations: Existing draft guidance and Table 17.1 show that compliance with all the requirements of 10 CFR 20.1403 is required, even if the LTC license option is proposed. Staff plans to clarify the guidance to emphasize this point.

Case-by-case approach for prohibiting subdivision of a privately owned site

Comment: One comment suggests that the preferred approach in the draft guidance to prohibit the sale of unrestricted use property should be removed. This approach attempts to rewrite the rule and is unnecessary if there is sufficient financial assurance to enable a third party to carry out the necessary control and maintenance. It is premature to issue definitive guidance given the lack of experience. Restate the preferred approach as an option. Another comment agrees with maintaining single ownership.

Staff considerations: The staff is considering removing the "preferred approach" and restating the approach as an option to be considered on a case-by-case basis, given site-specific factors. Licensees should discuss with affected parties the options for sustaining ownership and reuse of the site without causing undue burdens and provide this information in the decommissioning plan. The staff may also note in the revised guidance that this approach is only for special cases—privately owned sites under the LTC license, where NRC would be

acting as the third party if the site is abandoned. The staff may also note that this approach is intended to avoid gaps in ownership/licensee controls where NRC would need to make other arrangements for a custodian to assume control using the available financial assurance.

Flexibility of LTC license to future changes

Comment: Is there flexibility for the LTC licensee to propose a restricted release with a different institutional control? Is there flexibility for NRC to require a LTC licensee to remediate in the future if an inexpensive disposal option becomes available?

Staff considerations: Staff believes that there would be flexibility to propose a restricted release with a different and acceptable institutional control. As the draft guidance (in Section M.3.11) indicates, additional cleanup of a site under the LTC license would not be required unless there is new information that indicates a significant safety threat, similar to the finality statement under 10 CFR 20.1401(c). However, an LTC licensee would have the flexibility to propose unrestricted release if a new inexpensive disposal option becomes available.

No license termination and no completion of decommissioning

Comment: A comment questioned why the LTC license option is not terminated. A site with an LTC license should not be considered “decommissioned” because the definition of decommissioning includes termination of the license. Therefore, there is no finality with the LTC license.

Staff considerations: We are considering revising the guidance to further explain that the LTC license acts as an institutional control after remediation is completed and all the restricted use requirements of the LTR have been met. Therefore, although the operating license could be terminated and a new LTC license instituted, we believe amending the license is administratively more efficient and helps preserve a single agency record for the site. Therefore, staff would consider the site to be decommissioned if all the applicable decommissioning requirements have been met, and staff would consider including such a statement in the LTC license to resolve future questions about finality.

KEY COMMENTS ON DRAFT GUIDANCE FOR LA/RC

LA/RC justification

Comment: Commenters questioned the conditions for when the LA/RC could be an acceptable institutional control option vs. the LTC license. Specifically, commenters noted that there was no need for the condition where the licensee/owner needs to demonstrate that the LA/RC would be a significant benefit to the licensee/owner and affected parties. Rather, the licensee should demonstrate that LA/RC option is justified and provides the same level of protection for the public and the environment as the LTC license option.

Staff considerations: The staff is considering whether the condition for the licensee/owner to demonstrate that the LA/RC is a significant benefit to itself and affected parties is necessary. The staff is considering revising the guidance to reflect that LA/RC can be an acceptable institutional control option if: (1) the licensee/owner demonstrates that LA/RC is legally enforceable in the jurisdiction where the site is located; and (2) there are no monitoring or

maintenance activities that would require the site owner to have special expertise or knowledge to carry them out. [This is a necessary consideration for the appropriateness of the LA/RC option, as the NRC (acting in a monitoring and enforcing role) would not have the authority to approve the sale of the property. The restrictive covenant cannot legally require a property owner to obtain NRC approval of the potential buyer.]

Use of environmental covenants

Comment: Some comments focused on State involvement in LA/RC. Commenters suggested that the guidance mention that States have effective environmental covenant mechanisms available, which can be more effective than the NRC LA/RC.

Staff considerations: The staff is considering the comments on State involvement in the LA/RC. The Uniform Environmental Covenants Act (UECA) is a model law approved by the National Conference of Commissioners on Uniform State Laws, which may be adopted by individual States. It establishes requirements for a new valid real estate document (environmental covenant) to control future use of brownfields when a site is sold. It includes provisions absent from most existing State statutes, which may help to overcome obstacles that lead to ineffectiveness of other land use controls, if adopted by a State. The staff plans to coordinate with OGC to gain an understanding of UECA and determine if the guidance should include a specific discussion of UECA.