

NUREG-1757, Volume 2, Revision 2 Consolidated Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria

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U.S. Nuclear Regulatory Commission

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Working Group Members



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NUREG-1757, Volume 2 History



- NUREG-series published: September 2003
- Draft Supplement 1: September 2005
- NUREG-1757, Volume 2, Revision 1: September 2006
- In this new revision
 - NRC staff and stakeholder comments collected over the last several years are addressed
 - Experience from recent decommissioning projects is added

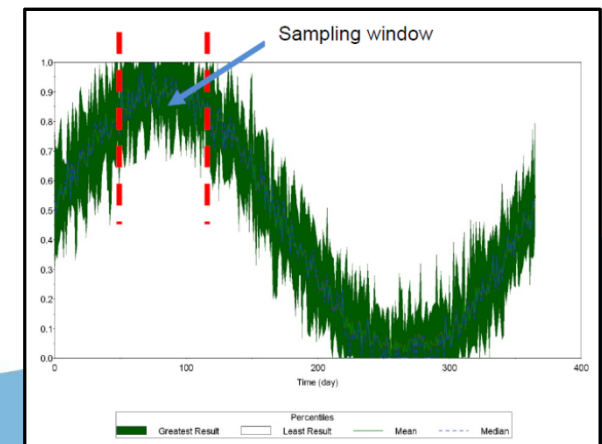
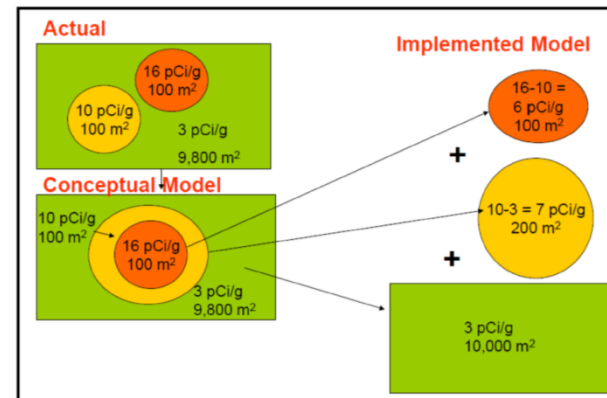
Major Changes to NUREG-1757, Vol. 2



- Dose modeling: updates on conceptual models, source terms, scenarios, and uncertainty analysis
- Radiological surveys: updates on soil reuse and Scenario B
- “As Low As Is Reasonably Achievable (ALARA)” analysis: updates based on recent experience
- Composite sampling: new guidance
- Engineered barrier analysis: updates and new references on engineered barrier performance and degradation

Dose Modeling

- Conceptualization
 - Model abstraction
- Source Term
 - Heterogenous distributions
 - Consideration of elevated areas
- Scenarios
 - Intrusion analyses for buried radioactivity
- Uncertainty analysis
 - Correlated parameters
 - Risk dilution

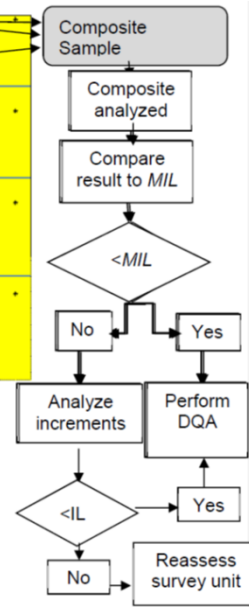
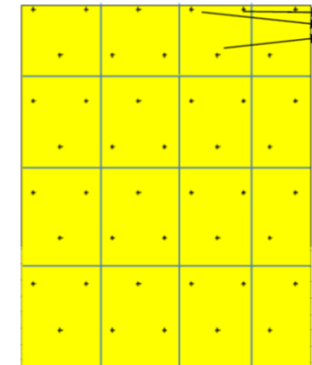
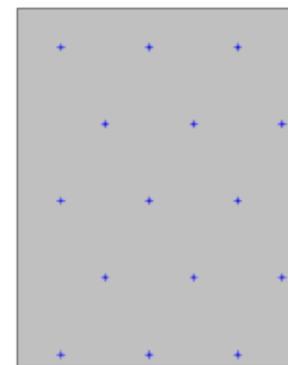


ALARA

- Updated guidance on recent studies and lessons learned
- Provides regulatory basis
- Discusses ALARA for unrestricted, restricted, and alternative release
- Discussion enhanced by lessons learned from proposed restricted release scenarios

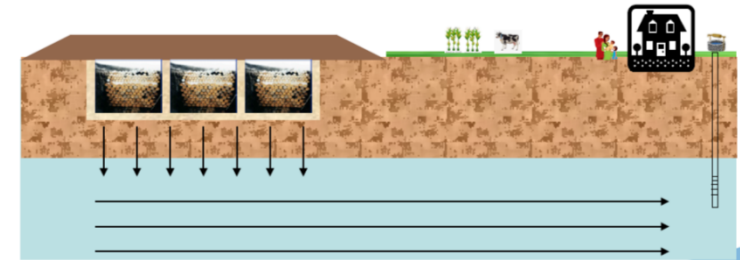
Composite Sampling

- New Appendix O
- Discusses when it would be beneficial to consider composite sampling
 - Hard-to-detect radionuclides are present
 - Number of samples is cost-prohibitive
 - Only interested in mean concentration
- Can be more effective in identifying elevated areas with appropriate modified investigation level (MIL)
- Discusses when it would not be appropriate to use composite sampling and other considerations
- Provides methodology and practical examples



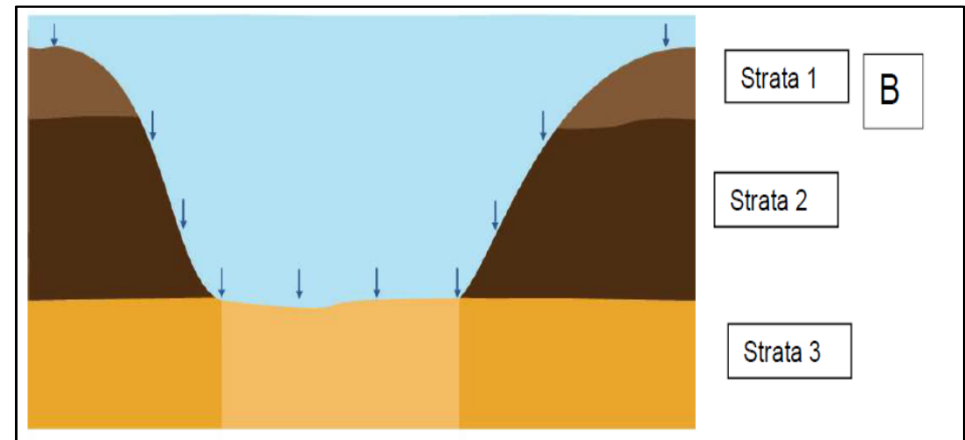
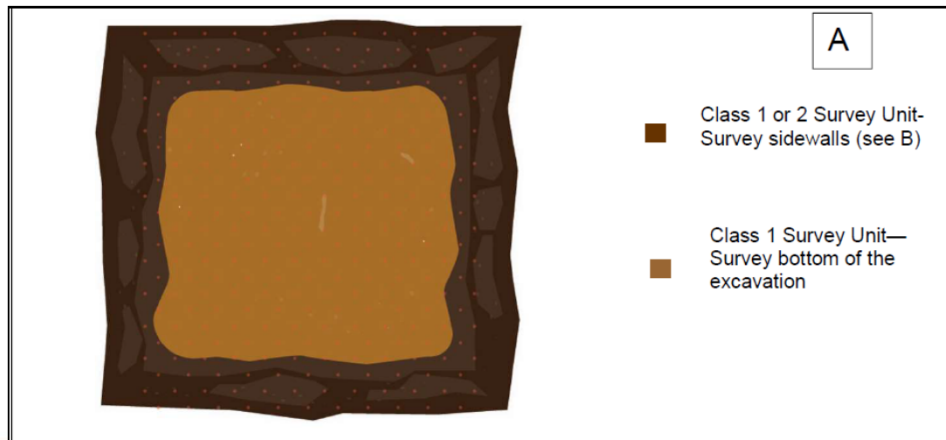
Engineered Barrier Analysis

- Several updates since last revision
- Discusses the difference between institutional controls and engineered barriers
- Provides guidance on different forms of model support
- Discusses how engineered barriers can be considered for restricted release and as part of the ALARA process
- Provides updated text and bibliography on evaluation of engineered barrier performance and degradation



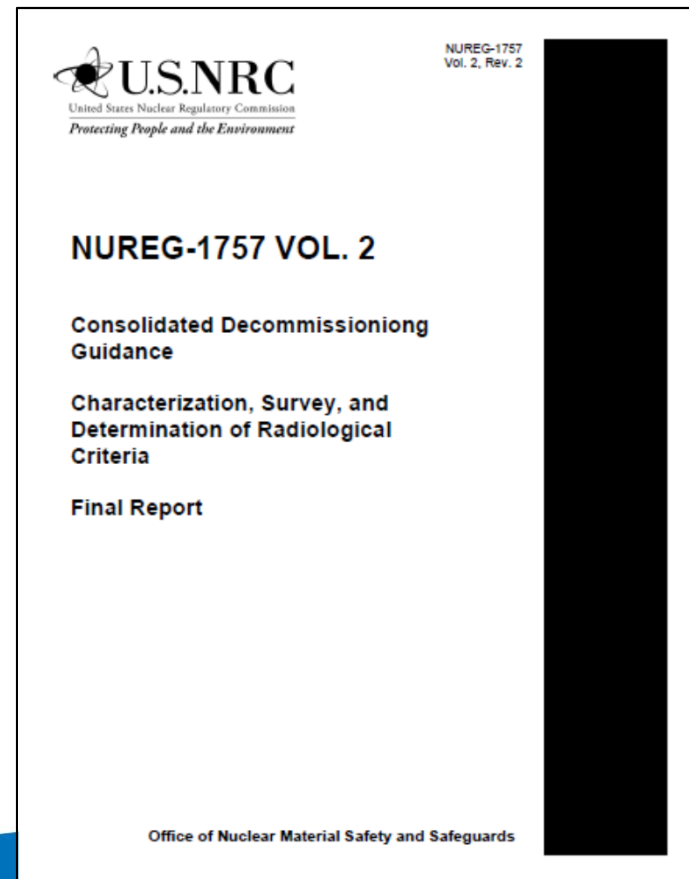
Radiological Surveys

- Updated guidance:
 - Scenario B
 - Reuse of soils
 - Surveys of excavations
 - Dose modeling and radiological survey integration
 - Use of graphical tools to visualize data



Next Steps

- Send to States for review and comment
- Send to federal partners
- Publish NUREG



Conclusions



- NUREG-1757, Volume 2, Revision 2 has been prepared
- New guidance should provide flexibility for complex issues
- Stakeholder input during review and comment period
- Planned for publication this calendar year
- After publication, the NRC staff would like feedback on how it could be improved further, for future revisions

Speaker Contact Information



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