

NRC Review of the Hanford VLAW Draft Waste Incidental to Reprocessing Evaluation

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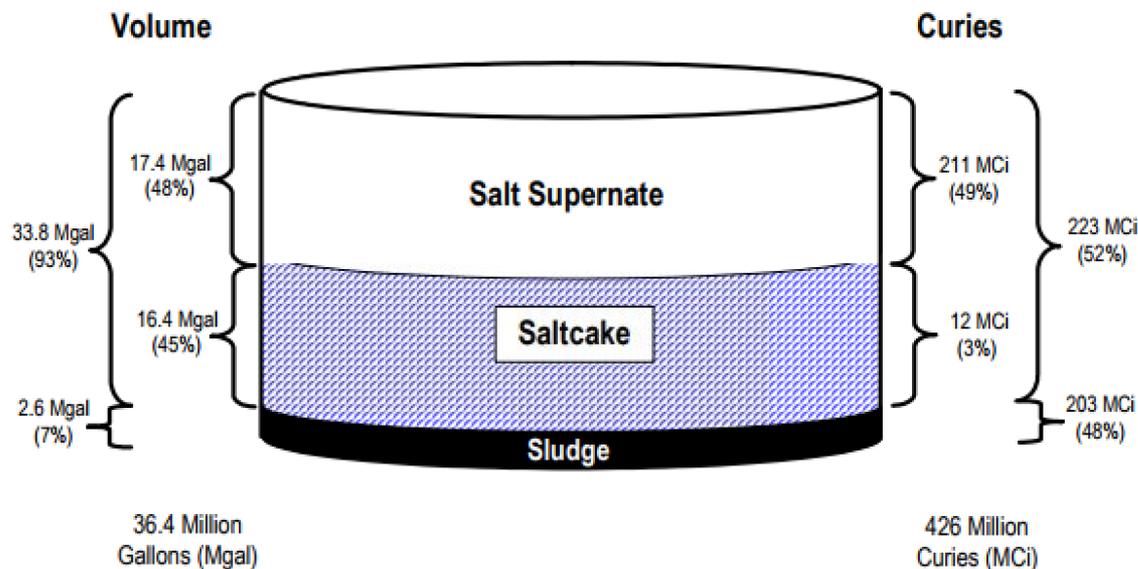
Overview

- NRC's role at Hanford
- Criteria
- Products
- Schedule

What is Waste Incidental to Reprocessing? (theory)

Waste Incidental to Reprocessing (WIR) is waste from reprocessing that can be managed as low-level radioactive waste because of the lower level of risk it poses. Lower risk can result from the following:

- Separation and, in some cases, further decontamination of low-level fraction of waste
- Residuals of a higher-activity fraction, left in place and further stabilized



NRC's Role at Hanford

Waste Incidental to Reprocessing (WIR)

- Review of Vitrified Low-Activity Waste (VLAW) draft waste evaluation
- Interagency agreement at Hanford (consultation only)
- NRC will have no monitoring role at Hanford

NRC's Role at Hanford (cont.)

- DOE submits its draft WIR Evaluation to NRC for review. Consultation typically includes the following:
- Scoping meetings or technical exchanges
- Requests for Additional Information
- NRC Technical Evaluation Report (TER)

Consultation

NRC's Role at Hanford - Contacts

- Project Management – Maurice Heath Maurice.Heath@nrc.gov x3137
- Technical Review (lead) – David Esh David.Esh@nrc.gov x6705
- Technical Review – Karen Pinkston Karen.Pinkston@nrc.gov x3650
- Technical Review – Leah Parks Leah.Parks@nrc.gov x0352
- Low-Level Waste & Projects Branch Chief – Stephen Koenick Stephen.Koenick@nrc.gov x6631
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Phone numbers take the form (301) 415 - XXXX

Criteria for Determining Reprocessing Waste is WIR (i.e., not high-level waste)

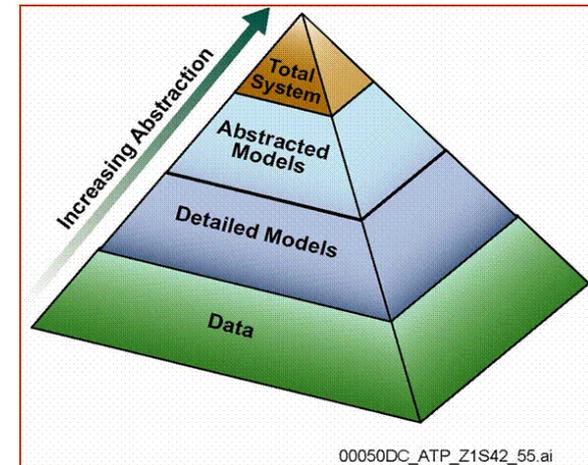
- Three sets of similar criteria:
 - Hanford: DOE M 435.1-1, *Radioactive Waste Management Manual*
 - West Valley: NRC West Valley Policy Statement
 - SRS and INL: *National Defense Authorization Act* for 2005, Section 3116
- The criteria are generally consistent:
 - All require removing key radionuclides to the maximum extent practical (or “technically and economically practical”)
 - All require disposal to meet the performance objectives of (or comparable to) 10 CFR 61 (DOE M 435.1-1 also has alternative requirements for waste identified as transuranic)

Performance Objectives of 10 CFR 61, Subpart C

- §61.41 Protection of the general population from releases of radioactivity (dose limit and ALARA)
- § 61.42 Protection of individuals from inadvertent intrusion
- § 61.43 Protection of individuals during operations
- § 61.44 Stability of the disposal site after closure

What is Reviewed

- Staff conducts completeness review of documents submitted
- Staff reviews the draft WIR evaluation document
- Staff reviews the supporting documents (first level)
- Staff reviews secondary and lower level documents as needed
- Staff reviews the performance assessment model, incorporated assumptions, supporting calculations, and model support
- Staff may develop an independent model to develop risk insights



What is Reviewed (cont.)

Overview of Performance Assessment

What is Performance Assessment?

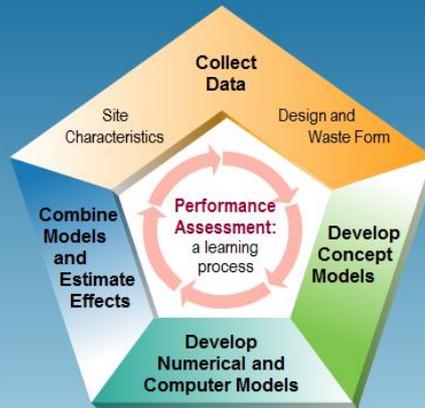
- Systematic analysis of what could happen at a site

What is assessed?

- What can happen?
- How likely is it?
- What can result?

Why use it?

- Complex system
- Systematic way to evaluate data
- Internationally accepted approach

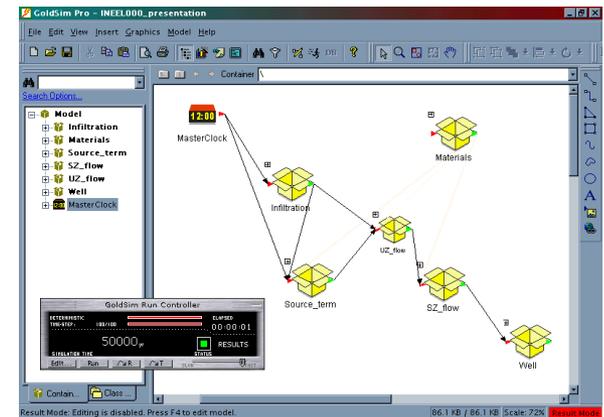
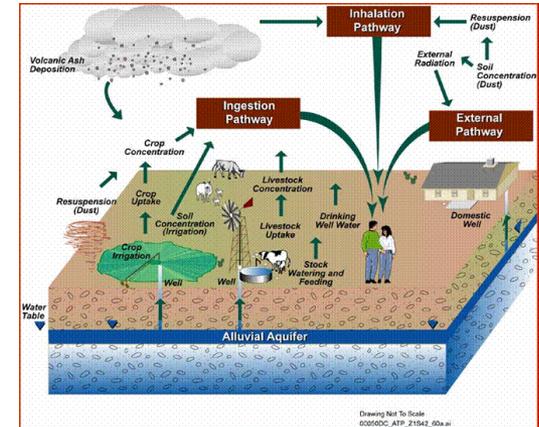


How is It conducted?

- Collect data
- Develop scientific models
- Develop computer code
- Analyze results

NRC would require a Performance Assessment to:

- Provide site and design data
- Describe barriers that isolate waste
- Evaluate features, events, and processes that affect safety
- Provide technical basis for models and inputs
- Account for variability and uncertainty
- Evaluate results from alternative models, as needed



How is it Reviewed

NUREG-1854

**NRC Staff Guidance for
Activities Related to
U.S. Department of Energy
Waste Determinations**

- Staff uses NUREG-1854 to guide the review
- NUREG-1854 provides areas of review and review procedures (ML072360184)

**Draft Final Report
for Interim Use**

**U.S. Nuclear Regulatory Commission
Office of Federal and State Materials and
Environmental Management Programs
Washington, DC 20555-0001**

How is it Reviewed (cont.)

- NRC's review is open and transparent
- Documents are publically available
- Basis for requests for additional information (RAI) is provided
- A report (TER) is developed to document the results of the review
- Documents can be accessed through ADAMS; enter docket number PROJ0736 in the search box

Other Considerations for the Review

- DOE requested that NRC determine if DOE demonstrated a reasonable expectation of compliance with the performance objectives for 1,000 years
- Model results to 10,000 years provided to support risk-informed decision-making

Schedule

- Receive draft WIR evaluation – **April 23, 2020**
- NRC transmits completeness review letter – June 22, 2020
 - Note: If all the documents necessary to conduct the review are not provided, adjustments to the schedule may be needed
- NRC completes detailed technical review and issues RAIs to DOE – **October 1, 2020**
- DOE transmits RAI responses to NRC – **January 27, 2021**
 - Note: If DOE requires additional time to address RAI responses, the schedule will need to be adjusted
- NRC completes TER – May 15, 2021
- Teleconference with DOE to discuss findings – May 19, 2021
- NRC transmits TER to DOE – **May 21, 2021**

Concluding Remarks

- NRC is an independent federal agency whose decision is based solely on the merits of the materials provided
- NRC strives to provide a clear and technically sound basis for findings

Thank you for your time and attention.