Improving the License Termination Process

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January 15, 2025

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NEI 22-01, License Termination Process, Revision 1

- Submitted for review on January 6, 2025.
- Incorporates substantial new information.
- Addresses suggestions from NRC April 30, 2024,letter.
- Serves to institutionalize continuous learning and ongoing knowledge transfer and retention.
- NEI recommends public meeting with NRC Staff to review the changes made.

Industry Learning Reveals Several Topics Requiring Further Guidance or Clarification

- Extent of radiological characterization
- Dose modeling to determine DCGLs
- Discrete radioactive particles
- Dose modeling for “clean” backfill materials
- Environmental assessments
- Compliance scenarios
- Risk-informing the license termination process

Learning: Radiological Characterization

- Extent of characterization required prior to NRC acceptance of an LTP for review has become excessive and sometimes impractical.
- The purpose of characterization:
  - Generate enough information to develop a decommissioning plan
  - Bin site areas by radiological status
  - Support development of initial DCGLs.
- Impractical/unnecessary:
  - Inaccessible areas
  - SSCs to be disposed of as radioactive wastes
- Radiological characterization is dynamic, evolves with project execution.
- LTP updates will capture the evolution of knowledge (and DCGLs)

Dose Modeling to Determine DCGLs

- Recent NRC requests regarding input parameter selection proving excessively restrictive.
- Expensive and time-consuming site-specific soil studies to determine Distribution Coefficients (Kds) can be replaced with documented Kds for the soil types present.
- Results are not significantly affecting DCGLs or remediation plans and should be discontinued.

Learning: Discrete Radioactive Particles

- Prevention is primary focus:
  - Isolation and control
  - Confirmatory surveys
- Result is high confidence in contamination-free site

Learning: Applying dose to “clean” backfill materials and groundwater pathways

- Recent LTP reviews are resulting in significant costs to analyze the hypothetical dose contribution of radionuclide concentrations below the level of detectability, including for radionuclides that are not known to exist in either the materials to be used as clean backfill that are brought in from non-impacted site areas or from offsite.

- Example of unnecessary conservatism that can be discontinued.

Learning: Scope and Extent of Environmental Assessments

- New questions and issues not previously considered relevant to decommissioning.
- Appropriate focus: updates to endangered species, National Historical Preservation Act, etc.
- Decommissioning is mandatory, LTP approval not a major federal action under NEPA.
- NRC could help by confirming the validity of the Decommissioning GEIS.

Learning: License Termination Compliance Scenarios

- Application of “unlikely but plausible.”
- Viability of the industrial use scenario?

- Result: expensive analyses that do not further demonstration/achievement of public health and safety goals.

Overall Learning

- The NRC approach to license termination not currently reflecting the attributes of a risk-informed regulator.
- Extensive resources being expended by both industry and NRC Staff for little safety benefit.
- Industry expenditures from the decommissioning trust fund to respond to some Staff requests could be better spent on decommissioning activities.
- NRC should look to the ADVANCE Act to risk-inform and transform the license termination process.