



A N D R E W S , T E X A S

WCS' Perspectives Regarding the Site Specific Analysis  
Rulemaking under Part 61

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# Proposed Rulemaking

- WCS commends the staff's efforts to develop a proposed rulemaking for Unique Waste Streams.
- WCS supports the three tiered approach, as provided in the proposed rule.
- WCS also supports the radiation dose limits to protect the public and an inadvertent intruder.
- WCS recently received authorization to dispose of large quantities of DU with requirements more stringent than those in the proposed rule.



# Community Support

- WCS opened the first new disposal facilities in over 40 years.
- State, regional, and local communities are supportive of the nuclear industry.
  - WCS, URENCO, WIPP, and International Isotopes.
- Strong community support was a critical factor in licensing WCS' disposal facilities.







# Vision

- In 2003, Texas legislature envisioned a modern disposal facility that could take both commercial and DOE Class A, B and C LLW.
  - Mandated stringent siting requirements.
  - Required a design similar to monitored, retrievable storage .
  - Required Texas takes title of the waste at time of disposal for the commercial facility.
  - DOE takes title of the waste at the time of license termination for the federal facility.



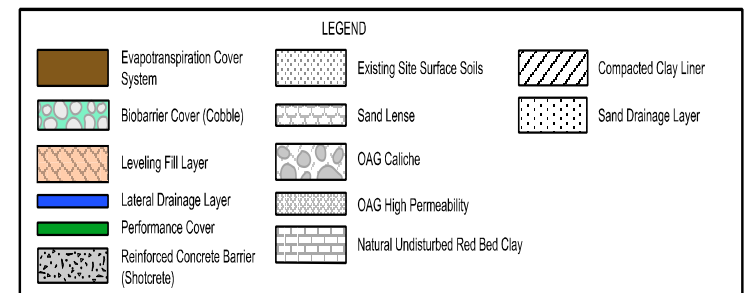
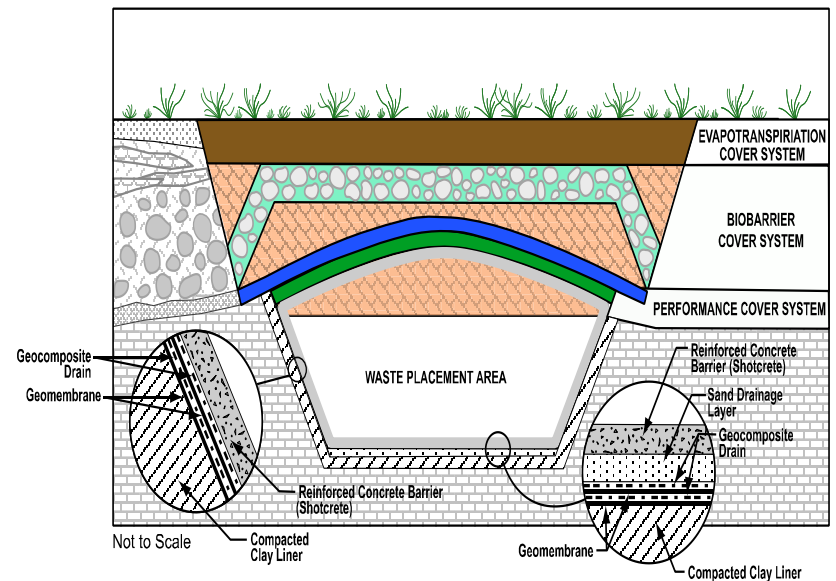
# Modern Disposal Facility

- A modern, well-sited and engineered facility can ensure the isolation of long-life radionuclides beyond 10,000 years.
  - Sited in an arid, remote part of the U.S.
  - Impermeable geology.
  - Far removed from potable water sources.
  - Engineering designs with multiple layers of defense-in-depth.
- Previous disposal sites were located because of their proximity to federal reservations, not based on their environmental performance.



# Site Characteristics and Engineering Design

- A 10 meter engineered cover that is not mounded at the surface.
- A 7 foot liner system that includes a 1 foot reinforced concrete barrier around the entire disposal unit.
- Disposal at depths greater than 30 meters is possible.
- Intruder resistant disposal canisters.





# Site Characteristics and Engineering Design

- All waste is disposed in the Dockum Formation.
  - 500 to 800 feet of impermeable redbed clay.
  - Water tables 600 – 1000 feet below grade.
- Arid climate: rainfall less than 15 inches per year and potential for evapotranspiration of over 60 inches of water per year.
- Hydrus infiltration model incorporated 24-hour rainfall events since 1954.
- The most extensively characterized site for LLW disposal in the U.S.
- Ideal for isolating long-lived radionuclides.





# 40 Years of Change

**Previous Standard for Class B/C LLW**



**A New Disposal Facility**







# Disposal of DU Authorized in Texas

- TCEQ regulations requires compliance for 1,000 years or peak dose, whichever is longer.
  - Most stringent Part 61-like regulations in the U.S.
- WCS analyzed disposal of 500,000 m<sup>3</sup> of DU as part of a major amendment.
- Analyzed time frames out to a million years, including the impacts from future climate changes.
- Demonstrated compliance with the dose limits for protecting the public and the intruder.



# Conclusions

- The industry has matured considerably over the past 40 years.
- WCS authorized to dispose of large quantities of DU complying with regulations more stringent than the three-tiered approach.
- A modern facility that is well sited, with defense-in-depth engineered barriers is suitable for isolating long-lived radionuclides well into the future.
- Agreement States and local communities willing to host a disposal facility may prefer maintaining existing regulations that may be more stringent than those under consideration by the NRC.