

The logo features two curved lines, one blue and one green, arching over the text. The text 'ENERGY SOLUTIONS' is centered, with 'ENERGY' in blue and 'SOLUTIONS' in white. Horizontal lines extend from the left and right sides of the text, with a green line on top and a blue line on the bottom.

**ENERGY SOLUTIONS**

Sealed Source Variance Request

August 18, 2011

# Summary of Variance Request

- Addresses a national security concern
- Class A sources only, prior to packaging
- Clive CWF disposal
- One year term from first shipment
  - Contracting
  - Transportation to Processors
  - Packaging
  - Transportation to Disposal
- End-of-Project Report



# Sealed Source Examples



Small medical sources, calibration standards

# Sealed Source Examples



Sr-90 eye applicator



Cs-137 CDC Series Brachytherapy source



Micrad brachytherapy sources (stored in shielding)



Micrad brachytherapy source (unshielded)

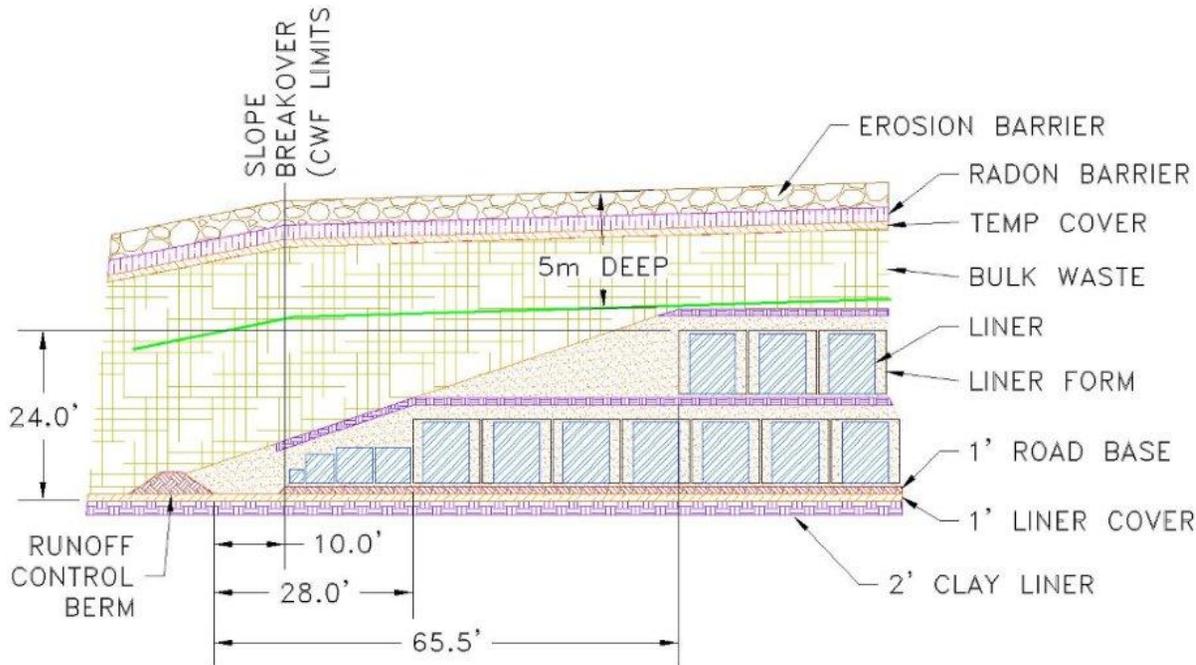


Cs-137 density gauge

# Sources will be Class A

- On a per-source basis
- No credit for averaging or encapsulating media
- Sources were explicitly considered in development of 10 CFR 61 classification system
- Excluded from Clive license because of historical practice





## Criteria

- Package void space <15%
- Pre-shipment review
  - Characterization
  - Packaging
  - Transportation
- Packages not opened
- > 5 m below top of cover

# Sealed Source Disposal Facilities

- Northwest Compact – US Ecology Richland, WA facility
  - 11 states
  - Utah sources disposed here
- Atlantic Compact – Energy Solutions Barnwell, SC facility
  - 3 states
- DOE – Nevada National Security Site
  - DOE sources from all states
- Texas Compact – Waste Control Specialists, Andrews, TX
  - 2 states
  - Potential to import from other states
  - Scheduled to open in 2011



# Comparison with PA rule

- Performance Assessment required
  - Not analyzed in Part 61 EIS
  - >10 percent of the dose limits at peak dose
  - >10 percent of the total site source term over the operational life of the facility
- Sealed sources
  - Were analyzed in Part 61 EIS
  - <10 percent of the dose limits at peak dose
  - May or may not be >10 percent of the total site source term over the operational life of the facility
- CWF license documentation provides required site-specific performance assessment





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