



ENERGY SOLUTIONS



LLRW Clive Disposal Update

Presented by
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for



March 4, 2014

Clive Disposal Facility



**World's Largest
Commercial Radioactive Waste Disposal Facility**



Our Values

- We always put **Safety** first
- We build **Trust** by
 - always telling the truth
 - making our Customer's success our success
 - being the best in the World at what we do
 - and delivering results
- We care deeply about our **Employees** and want them to be happy and successful
- We listen to our Internal and External Stakeholders and **Partners**

Safety

Clive

- Safety culture initiative
- Last lost time injury November 2010
 - Currently at >1,100,000 hours without lost time injury
- Safety – avg <1 recordable in the past 3 years
- ALARA – avg annual dose 20 mrem/Radworker
- 2013 UMA Award of Merit for Safety
- 2013, 2012, 2011, and 2010 NSC Award for Safety



Proven Experience

- **Over 26 years** of proven experience treating and disposing of radioactive waste
- **One-of-a-kind** bulk waste and containerized waste facilities with unique licenses and permits
 - Radioactive Material Licenses (LLRW & 11e(2))
 - RCRA Permit (Treatment & disposal of MW)
 - TSCA Permit (PCB waste streams)
 - SNM Exemption (Concentration based limits)
- **Over 11 miles** of onsite rail for efficient and cost-effective waste handling
- **Long-term** federal and commercial contracts

Logistics, Processing, & Disposal

Logistics

Provide all aspects of complex planning and transportation

Dedicated fleet of tractors, trailers, railcars, and containers

Processing

Own/operate multiple processing facilities in South Carolina, Utah, and Tennessee

The most diverse capabilities in the U.S. for handling, treating, and processing radioactive materials

Disposal

Own the largest commercial radioactive waste disposal facility for Class A low-level radioactive waste (LLRW) in the U.S.

Operate the LLRW disposal facility in Barnwell, SC to dispose of Class A, B, and C LLRW from Atlantic Compact states



Treatment & Disposal Services

- Bulk Waste Disposal
- Containerized Waste Facility
- Large Components
- Mixed Waste Treatment
 - Macroencapsulation
 - Stabilization
 - Liquid Solidification (LLRW and MW)
 - Mercury amalgamation
 - Thermal Desorption
- Disposal of PCB waste
- **We have expanded our capabilities based on the customer's needs**



Large Components



Large Components



Clive Capacity

- Over 130 million cubic feet of licensed capacity remaining
- At average receipts of 3-4 million cubic feet per year, the Clive facility has 30 to 40 years of capacity remaining



- Utah DRC approved License variance to dispose Class A sealed sources at Clive
- Allows disposal of certain Class A sealed sources through 9/30/14
- Permanent License amendment may be pursued in the future, depending on success of this variance
- DRC approval letter found at <http://www.radiationcontrol.utah.gov/EnSolutions/docs/2012/Apr/Variance.PDF>



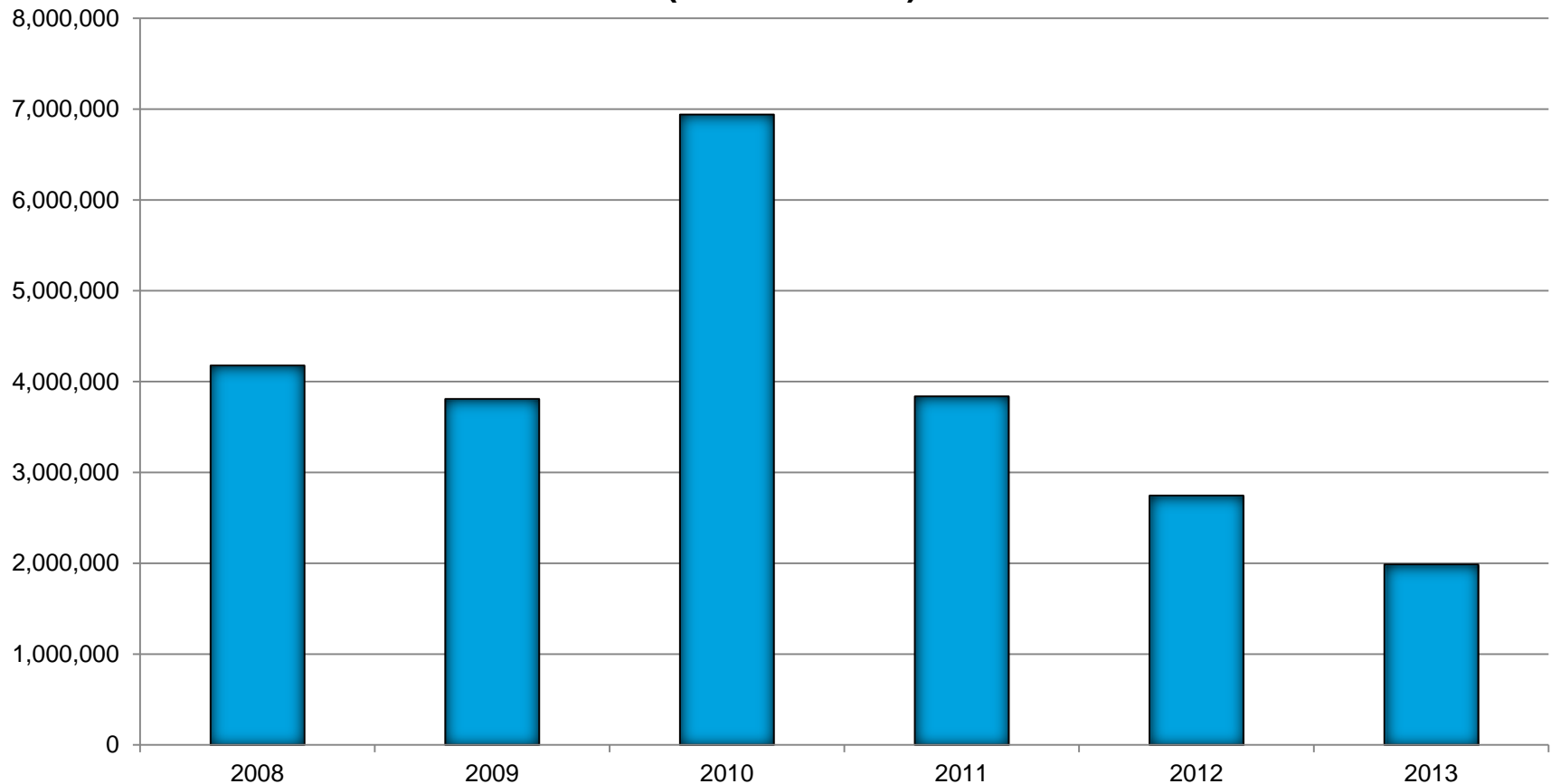
Sealed Source Variance Conditions



- Variance Conditions
 1. Waste Class is calculated based on the activity and volume of each individual sealed source (activity cannot be averaged over the container for Waste Class calculation)
 2. Sources will be domestic only; and part of round-up coordinated by CRCPD SCATR program (Sealed sources must be registered at <http://osrp.lanl.gov>)
 3. A minimum of one inch of grout must encapsulate the sealed sources within the disposal container
 4. Disposed at Clive CWF (refer to the CWF WAC)
 5. EnergySolutions will approve each shipment
 6. Isotopes with half-lives of ~30 years or less (includes Cs-137)

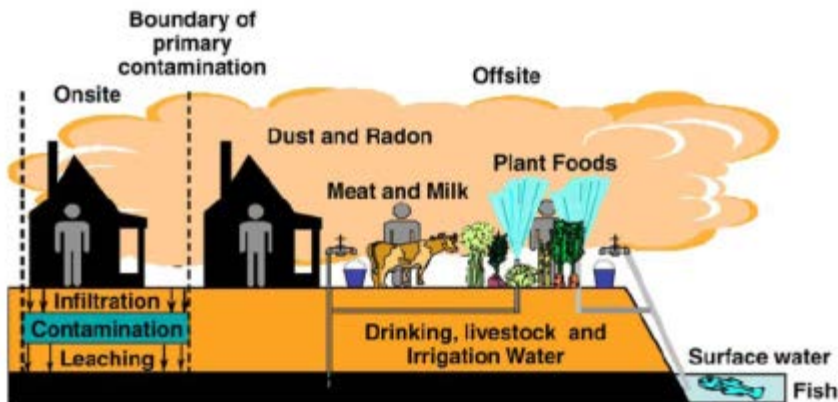
- Energy *Solutions* and Studsvik have combined expertise to form a joint venture called SEMPRASAFE
- SEMPRASAFE combines Energy *Solutions*' capabilities for disposal and waste-management logistics with Studsvik's world-class waste processing capabilities to address disposal of high activity spent ion-exchange resins
- Utah DRC granted Energy *Solutions* approval to dispose of up to 40,000 ft³ per year of processed resins
- SEMPRASAFE completed 42 shipments for disposal through February 2014

**Annual Waste Volume (Cubic Feet) Received @
EnergySolutions Clive Facility
(2008 to 2013)**

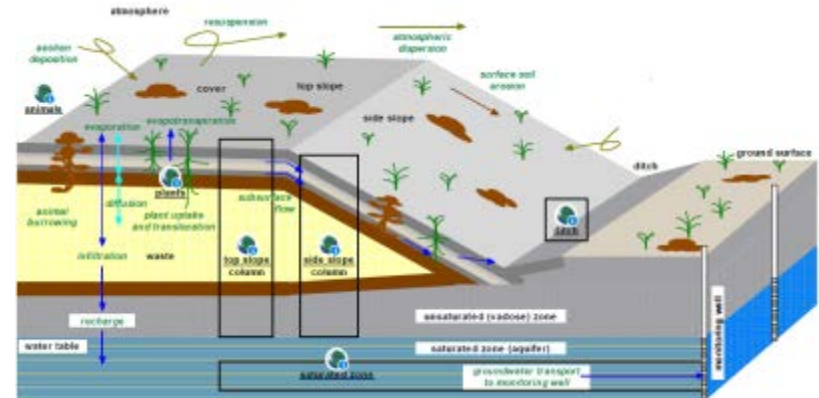


Depleted Uranium Status

- Moratorium effective June 1, 2010
- May not receive or dispose of significant quantities of concentrated DU until PA approved
- PA submitted June 1, 2011
- Regulatory review underway
- Decision projected for Q3-Q4 2014



From NUREG/CR-6937, Fig. 1.1



Attribution Letter

- March 22, 2012, letter from Rusty Lundberg to Generator Site Access Permit Holders (GSAP)
- GSAPs may provide the original generator's name and original state of generation on the manifest
- GSAPs may also provide this information on a separate spreadsheet in cases where waste is attributed to the processor. A note shall be provided on the original manifest stating that additional information has been provided via spreadsheet.
- This will enable the DRC to confirm the origin of waste disposed of at the Clive facility.

- Preliminary scoping comment period anticipated Q1 2014 for UAC R313-26, Generator Site Access Permit Requirements
- Will be followed by a formal comment period
- Impacts to generators in preliminary language:
 1. Authorizes DRC to do point-of-origin inspections of waste packaging, classification, and management. (R313-26-3(3)(a))
 2. DRC approval needed before transferring GSAPs. (R313-26-3(8))
 3. GSAP must provide advance manifest to DRC at least 3 business days before the waste arrives at Clive. (R313-26-4(1))
 4. The attribution spreadsheet is put into the rules. (R313-26-4(1))
 5. Compliance with Clive PA is put onto the generator. (313-26-4(5)(b))
 6. GSAP enforcement policy is enshrined in the rules. (R313-26-6(1))
- ES has commented on each suggesting improved language

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 the left side having a blue line on top and a green line on the bottom, and the right side having a blue line on top and a green line on the bottom.

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