ENERGYSOLUTIONS

LLRW Clive Disposal Update

Presented by

Daniel B. Shrum

for

WM Symposia 2013

February 26, 2013

Safety

Clive

- Safety culture initiative
- Last lost time injury November 2010
  - Currently at >765,000 hours without lost time injury
- Finished 2011 with 0 recordables/0 Lost time
- Finished 2012 with 1 recordable/0 Lost time

Proven Experience

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- Over 25 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 10 miles of onsite rail for efficient and cost-effective waste handling
- Long-term federal and commercial contracts

Logistics, Processing, & Disposal

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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

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- 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

Clive Capacity

- Over 130 million cubic feet of licensed capacity remaining
- At average receipts of 4 million cubic feet per year, the Clive facility has 25 to 30 years of capacity remaining

Sealed Sources

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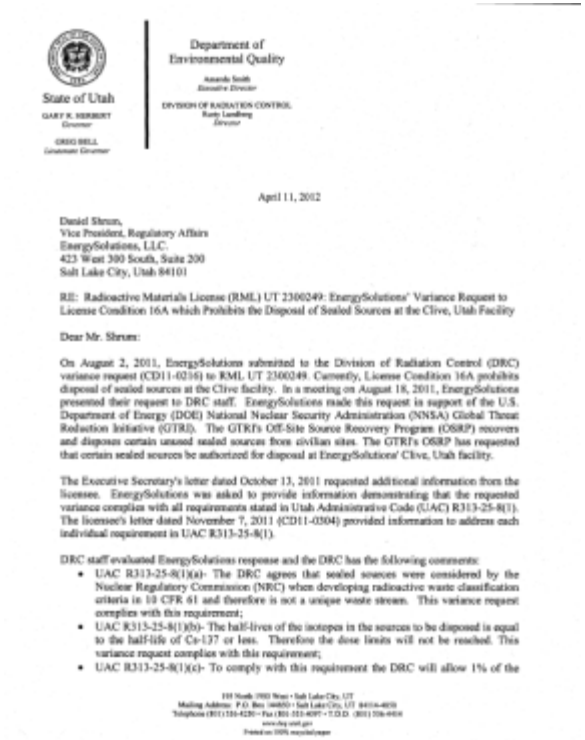
- Utah Division of Radiation Control (DRC) approved License variance to accept Class A sealed sources for disposal at Clive
- Allows disposal of certain Class A sealed sources for one year, measured from initial shipment to Clive
- Permanent License amendment may be pursued in the future, depending on success of this variance
- DRC approval letter found at http://www.radiationcontrol.utah.gov/EnSolutions/docs/2012/Apr/Variance.PDF



State of Utah

Department of Environmental Quality

April 11, 2012

Daniel Shrum,
Vice President, Regulatory Affairs
EnergySolutions, LLC
423 West 300 South, Suite 200
Salt Lake City, Utah 84101

RE: Radioactive Materials License (RML) UT 2300249: EnergySolutions' Variance Request to License Condition 16A which Prohibits the Disposal of Sealed Sources at the Clive, Utah Facility

Dear Mr. Shrum:

On August 2, 2011, EnergySolutions submitted to the Division of Radiation Control (DRC) variance request (CD11-0216) to RML UT 2300249. Currently, License Condition 16A prohibits disposal of sealed sources at the Clive facility. In a meeting on August 18, 2011, EnergySolutions presented their request to DRC staff. EnergySolutions made this request in support of the U.S. Department of Energy (DOE) National Nuclear Security Administration (NNSA) Global Threat Reduction Initiative (GTRI). The GTRI's Off-Site Source Recovery Program (OSRP) recovers and disposes certain unused sealed sources from civilian sites. The GTRI's OSRP has requested that certain sealed sources be authorized for disposal at EnergySolutions' Clive, Utah facility.

The Executive Secretary's letter dated October 13, 2011 requested additional information from the licensee. EnergySolutions was asked to provide information demonstrating that the requested variance complies with all requirements stated in Utah Administrative Code (UAC) R313-25-8(1). The licensee's letter dated November 7, 2011 (CD11-0504) provided information to address each individual requirement in UAC R313-25-8(1).

DRC staff evaluated EnergySolutions response and the DRC has the following comments:

- UAC R313-25-8(1)(a)- The DRC agrees that sealed sources were considered by the Nuclear Regulatory Commission (NRC) when developing radioactive waste classification criteria in 10 CFR 61 and therefore is not a unique waste stream. This variance request complies with this requirement;
- UAC R313-25-8(1)(b)- The half-lives of the isotopes in the sources to be disposed is equal to the half-life of Cs-137 or less. Therefore the dose limits will not be reached. This variance request complies with this requirement;
- UAC R313-25-8(1)(c)- To comply with this requirement the DRC will allow 1% of the

Sealed Source Variance Conditions

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- 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)

SEMPRASAFE

- 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 ft^3 per year of processed resins
- In 2012, SEMPRASAFE received over 10,000 ft^3 of resins for processing
- SEMPRASAFE business continuing to grow in 2013

Depleted Uranium Status

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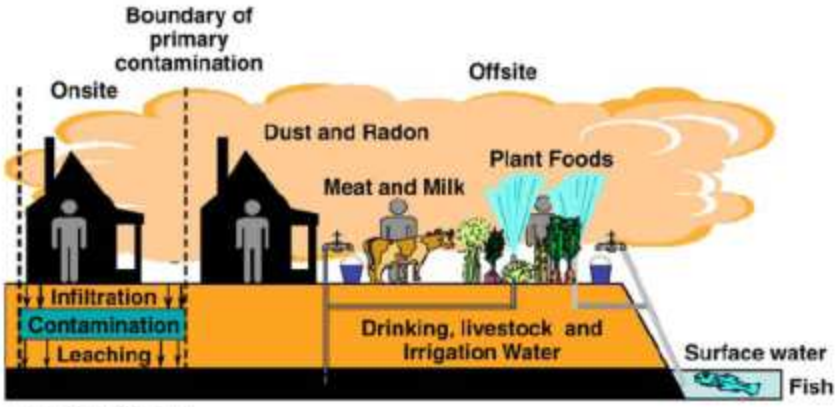
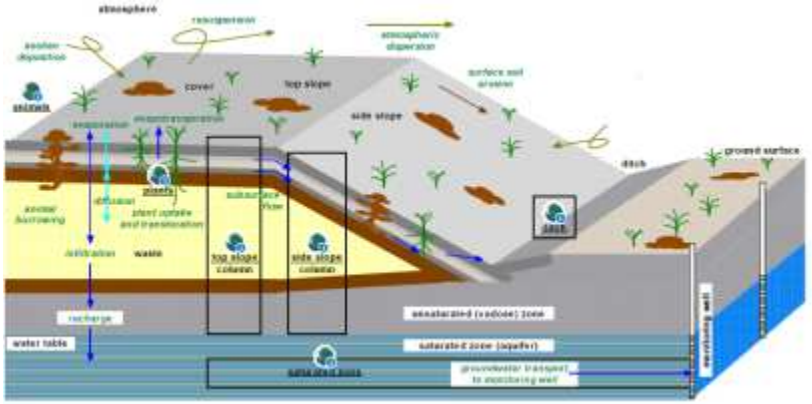
- Moratorium effective June 1, 2010
- May not receive or dispose of significant quantities of concentrated DU until PA approved
- PA submitted June 1, 2011
- Regulatory review projected to take at least one year
- Utah DRC scheduled to begin the review this year



From NUREG/CR-6937, Fig. 1.1



Attribution Letter

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- 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.

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