

# Licensing and Activities Update EnergySolutions' Disposal Facilities

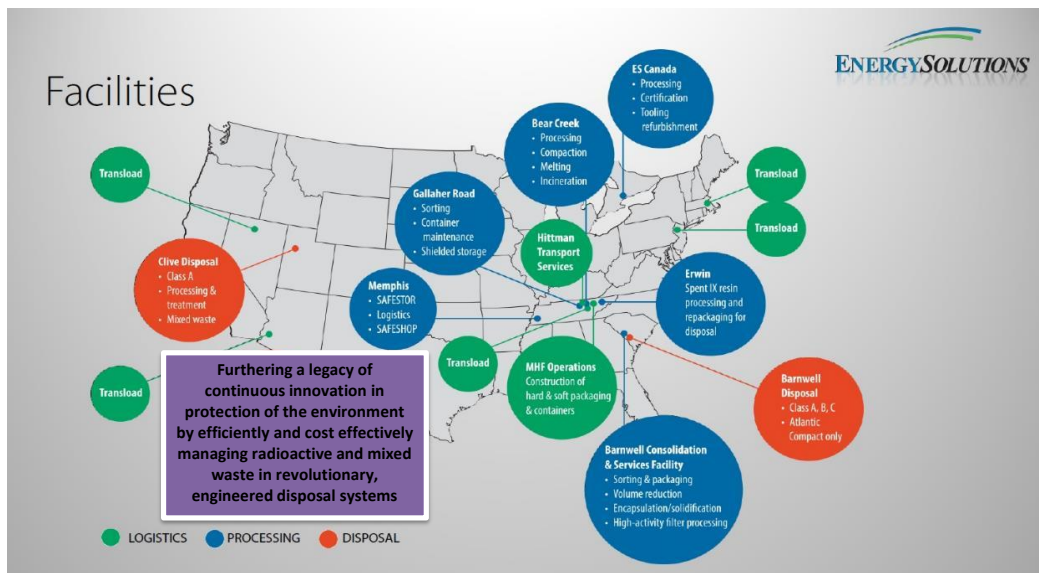
presented by *Vern Rogers*  
*Director of Regulatory Affairs*

Fall 2021 LLW Forum Meeting  
October 13, 2021



*All you need in radioactive and hazardous waste management*

## Broad Range of Industry-Critical Services



# Logistics, Processing and Disposal



**Casks and Containers**



**Liquid Processing Equipment**



**Analytical Services**



**Decontamination and Decommissioning**



**Metal Melt & Beneficial Reuse**



**Large Component Transportation**

## Clive Utah Commercial Radioactive Waste Disposal Facility



# Safety

## ■ Industrial

- VPP Star - 2017
- Behavior Based/HPI
- Between 2011 & 2021, over 6.8 million hours worked without a lost-time injury
- Utah Safety Council Award of Merit
  - 2006, 2007, 2008, 2009, 2012, 2013, 2015, 2016, 2018, 2020
- Utah Safety Council Perfect Record Award
  - 2011, 2012, 2013, 2015, 2016, 2017
- Utah Safety Council 1 Million Man Hour Award
  - 2013, 2016, 2020
- Utah Safety Council Award of Honor
  - 2017, 2019
- National Safety Council Perfect Record Award
  - 2005, 2006, 2007, 2008, 2010, 2015, 2017
- National Safety Council Million Man Hour Award
  - 2006, 2008, 2013, 2017, 2020

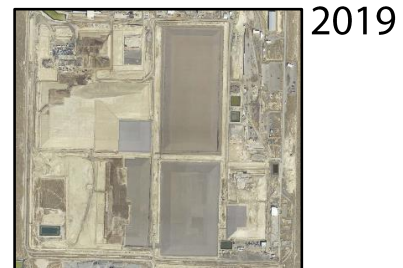
## ■ Radiological

- ALARA
- Personnel exposures very low
- 39 mrem average annual employee exposure



# Facility Overview – Clive Operations

- Over 30 years of proven experience treating and disposing of radioactive waste
- Bulk waste and containerized waste facilities with unique licenses and permits
  - Class A Radioactive Material
  - Radioactive Material Licenses - LLRW & 11e(2)
  - RCRA Permit (Treatment & Disposal of MW)
  - TSCA Approvals(PCB waste streams)
  - SNM Exemption (Concentration based limits)
  - Exempted LLRW (pending)
  - Federal-generated LLRW (pending)
- Long-term federal and commercial contracts.



2019



2004

## Clive Waste Acceptance Capability

### Class A LLRW and NORM

Soil, resin, filters, operational waste, large components

### Radioactive Liquids

Two 10,000 gallon tanks to process real-time

Processing up to 20,000 gallons per week

### Mixed Waste (Radioactive and RCRA Hazardous)

#### MW Treatment

Stabilization, Amalgamation, Thermal Desorption, Spray Wash, Macroencapsulation, Solidification

Lead shielding, lead acid batteries, solvent contaminated waste

### PCB/Radioactive Waste

### Large Component Logistics

### UCNI and Export Controlled Waste

Other hazardous substances (e.g., asbestos, beryllium)

## Clive Operating Capacity

- Unload 60 Railcars per day
- Unload 30 Truck shipments per day
- Shred 1,500 tons per day
- Place 50,000 CF per day
- 20 M gallons evaporation pond storage





## New Railyard Maintenance and Storage Facility



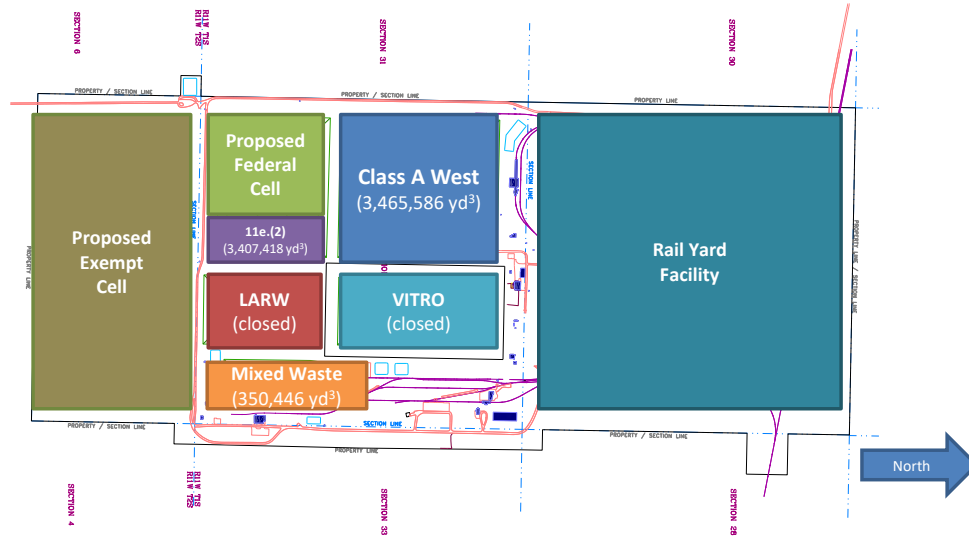
- Railcar Storage & Staging
  - 10 Ladder Tracks (Approximately 3 Miles)
  - Storage Capacity – Approximately 300 Railcars
- Empty Railcar Maintenance and Repair In Accordance for FRA regulations
- Transloading of Intermodals, SeaLands and Other Bulk Containers
- Total Site Track – Over 16 Miles (2 Locomotives)

## New East Side Rotary (Large Volume Projects)

- Empty 100 tons (6,000 cf) of waste in less than 5 minutes
- Railcar enters adjacent thaw building prior to being emptied in case waste/soil is frozen
- Washing/decon and survey of railcar within building after being emptied
- Railcar rotary facility placed on loop track for efficient operations



## Clive's Disposal Available Capacity



## New Regulatory Oversight



Director - Doug Hansen

Assistant Director - Jalynn Knudsen

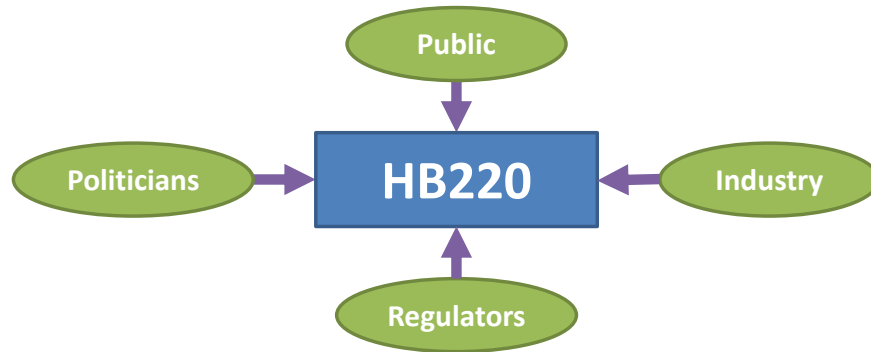
LLRW Section Manager - Otis Willoughby

### ADDED LICENSING STAFF

Brandon Davis – Env. Engineer  
Tyler Hegburg – Env. Scientist

Larry Kellum – Health Physicist  
Shani Ritter – Transportation Specialist

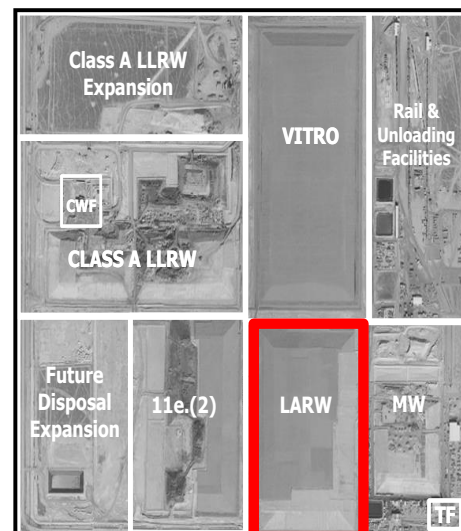
## Federal Cell Facility (depleted uranium)



1. Site-specific Performance Assessment
2. Designation of a Federal Cell Facility
3. Perpetual stewardship agreement with DOE

## Legacy of Low Activity Waste Management

- **1988** – Clive receives first Radioactive Material License (RML) for disposal of NORM
- **1990** – RML amendment to dispose of LARW at specified concentration limits
- **2001** – RML amendment to dispose of Class A LLRW
- **2006** – Acquisition of Duratek with BSFR disposal in TN
- In past few years, NRC addressing regulatory approach to non-licensed “VLLW” disposal options

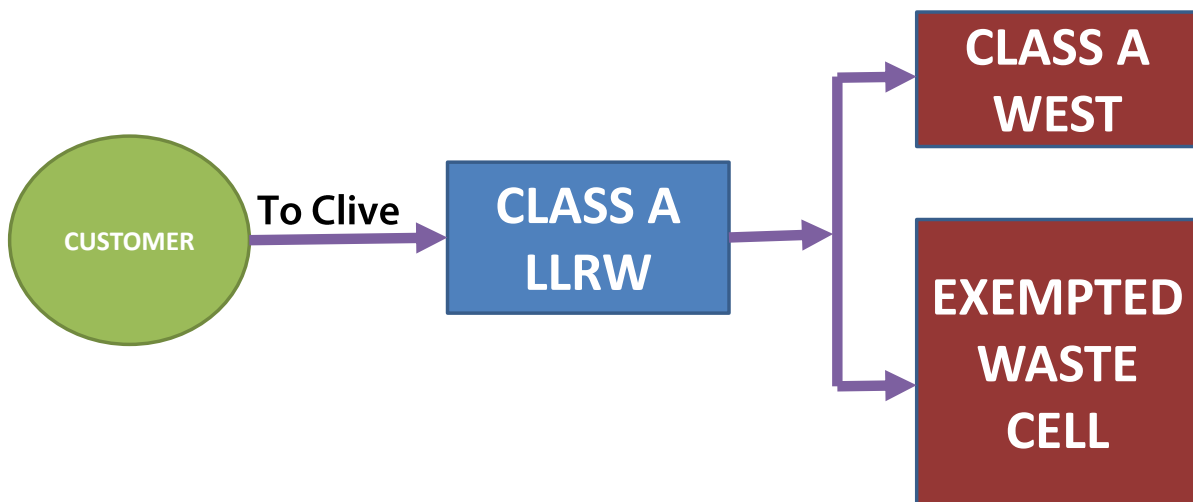


## License Exempted Waste

- Significant volumes of non-impacted/suspect waste generated by D&D projects
- ES owned Section 5 at Clive site ideal for this type of waste
- Waste shipped to Clive will be screened to ensure compliance with new landfill WAC
- WAC process and limits being evaluated by Utah Division of Waste Management and Radiation Control
- Evaluation of life-cycle costs and risks by generators to determine optimal waste streams/projects



## License Exempted Waste





## Excellence through Significant D&D Completions

SEFOR



La Crosse



Zion



## San Onofre Nuclear Generating Station

- December 20, 2016, EnergySolutions selected to decommission San Onofre Nuclear Generating Station.



## Historic Journey – San Onofre Nuclear Power Plant Reactor Pressure Vessel



- RPV removed from the SONGS Unit 1 in 2002 and grouted into a special container.
- 15'6" in diameter and 38'6" long, weighing 670 tons.
- Rail for 366 miles and then 400 miles road (record sized shipment)
- Tractor trailer - hydraulic platform trailer with 384 trailer tires, pushed and pulled by six large trucks.
- Required approvals and/or coordination with over two dozen federal, state and local agencies and government entities.

## Three Mile Island Unit-2 Nuclear Power Plant

EnergySolutions, Inc. announced on October 15, 2019 a contract to decommission Unit 2 at the Three Mile Island Nuclear Generating Station.





## Fort Calhoun Nuclear Generating Station

**EnergySolutions, Inc. announced on April 29, 2019 a contract to decommission the Fort Calhoun Nuclear Generating Station.**



## Kewaunee Nuclear Power Station



**EnergySolutions, Inc. May 12, 2021 – EnergySolutions has entered into an agreement with Dominion Energy to acquire the Kewaunee Power Station located in Carlton, Wisconsin.**

## Barnwell Processing and Disposal Facility



## Barnwell Facility

- The Barnwell Disposal Facility is owned by the state of South Carolina and operated by EnergySolutions. The facility is the host disposal site for the Atlantic Compact which is comprised of South Carolina, New Jersey, and Connecticut.
- The Facility began operations in 1971 and has provided continuous disposal operations for over 45 years. The site is licensed to dispose of Class A, B and C low-level wastes, including irradiated hardware and large components, steam generators, resins, and reactor pressure vessels.



Thank You



*All you need in radioactive and hazardous waste  
management*