

Why the US has an LLRW Compact System

Organization of Agreement States Annual 2025 Meeting
The Westin, Washington DC

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Agenda/Objectives

- Speaker Introduction
- Objective 1 – Explain why the compact system was formed and the role of the Low-Level Radioactive Waste Forum
- Objective 2 – Introduce you to the current licensed compact disposal facilities, expansion plans, and what is required to access each facility

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Speaker Introduction

- Dan Shrum
- BS – Engineering Geology, MS – Hydrogeology, MBA
- 10+ years at JMM, MWH, and Stantec
- 20+ years at Envirocare, *EnergySolutions*
- 5 years at Low-Level Radioactive Waste Forum
- So many years, "Gone to waste"

Nuclear Power Produces Waste

Public Domain Photos



Why do we have a Compact System?

- There were three operating facilities for disposal Beatty, NV; Barnwell, SC; and Richland, WA. In 1979, the governors of the three existing facilities testified in a subcommittee of Congress that they could not bear all the responsibility of LLRW disposal



OR



Low Level Radioactive Waste Policy Act 1980 (85)

- The federal legislation of 1980, and the subsequent Low-Level Radioactive Waste Policy Amendments Act of 1985, were endorsed by the Governors of the 50 states
- The purpose of the LLRWPA was to provide for more LLRW disposal capacity and to *distribute obligation for disposal on a state or regional basis*
- This legislation gives states the responsibility to provide for disposal of commercial low-level radioactive waste and encourages states to form interstate agreements, or compacts, to cooperatively implement the law
- Regional disposal is safest and most efficient

Low Level Radioactive Waste Policy Act 1980 (85)

- State legislatures and US Congress approve of each compact. Each compact is responsible for all the waste generated in their compact and for developing a disposal site. One state volunteers to be the host state for the LLRW disposal facility
- The Commerce Clause gives Congress the authority to regulate interstate commerce — the LLRWPA gave compacts authority to exclude waste from a compact’s disposal facility

“To regulate commerce with foreign nations, and among the several states, and with the Indian tribes;”, US Constitution, Article 1, Section 8, Clause 3

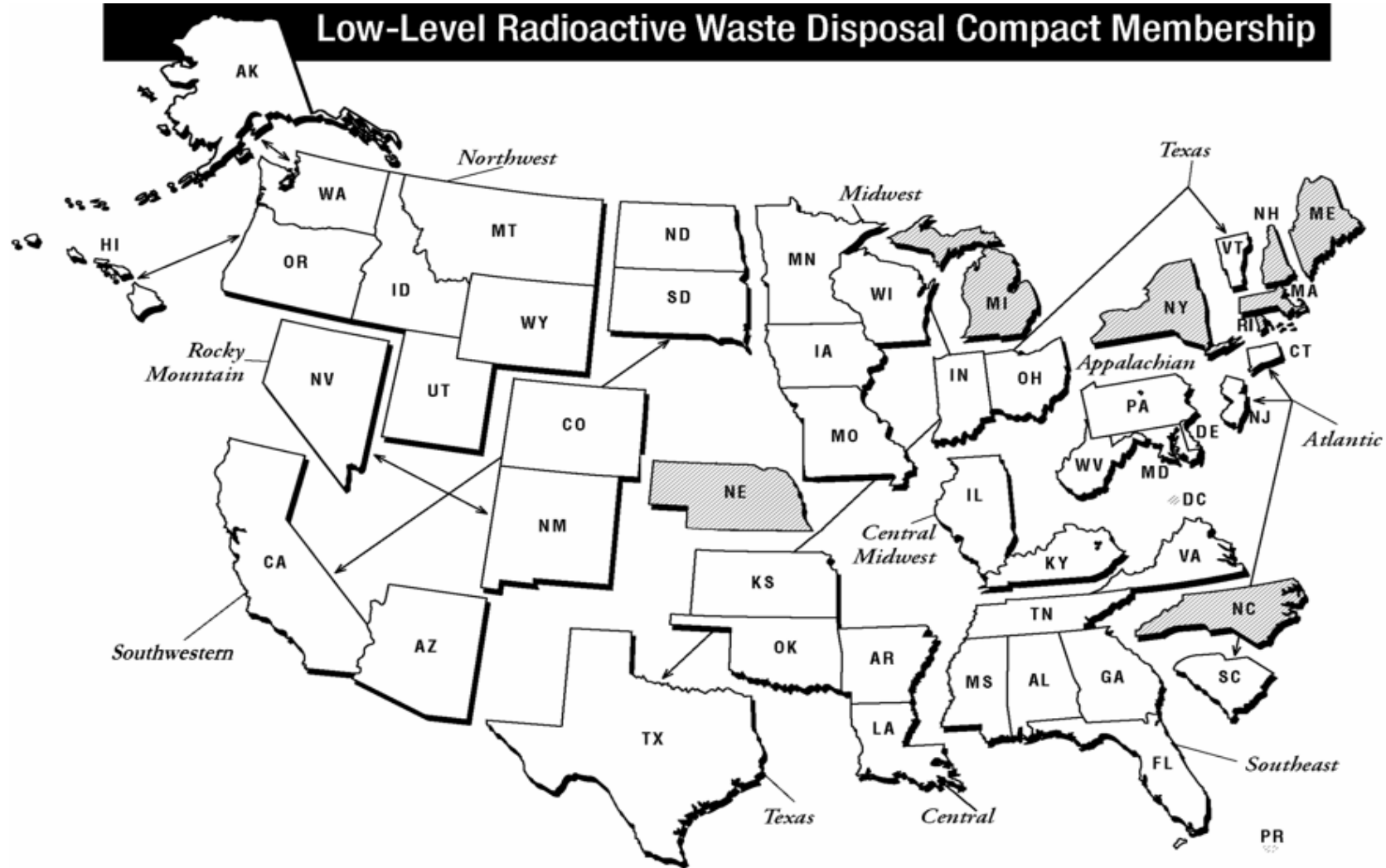
Compacts

- **Commissions manage the compacts. The authority of licensing and regulation of a facility is given by the NRC to the state.**
- Regulations are found in Code of Federal Regulations under “Energy” in Chapter 1 of Title 10- Parts 61 and 62. This authority comes from Section 274 of the Atomic Energy Act of 1952- where the NRC gives up portions of its regulatory power to agreement states.
- The EPA, Department of Transportation, and the Department of Health and Human Services also partly regulate LLRW.

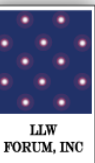
Developing New Sites within Compacts

- Texas, Nebraska, California, Pennsylvania and Illinois submitted applications to construct and operate new facilities. Only California was successful (Ward Valley), but ultimately failed. All siting and licensing efforts have failed except Texas who failed (Sierra Blanca) and then reapplied (Andrews). Over \$1 Billion was spent trying to develop failed sites
- Clive, Utah opened in 1987 to dispose naturally occurring radioactive materials (not discussed under LLRWPA). The facility altered intake over the years to eventually take Class A, Mixed Waste and 11e.(2) mill tailings
- Andrews Texas facility took 16 years and \$500 million to complete (after an additional 16 years and \$55 million were spent by the state of Texas in failed efforts to open a facility)
- Both the Clive and Andrews Texas facility were developed by private entities who could make disposal economically viable

Current Compact Geography



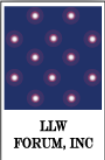
From NRC.gov



Map of the 18 **BIG** schools



From Fox website



LLRW Forum

- In 2001, the Low-Level Radioactive Waste Forum became an independent nonprofit organization—the Low-Level Radioactive Waste Forum, Inc.
- The LLW Forum is committed to fiscal transparency and provides up-to-date documents on its summary of assets and budget projections.

LLRW Forum Mission

- To facilitate the implementation of the Low-Level Radioactive Waste Policy Act by serving as the consolidated voice and face for the compacts and states.
- As the consolidated voice, we promote the safe and efficient disposal of Low-Level Radioactive Waste by working with a broad spectrum of key stakeholders including regulators, policy makers, the public, and industry to develop national policy that anticipates and resolves problems.

Four States



Licensed Commercial LLRW Disposal Facilities



From NRC.gov

Barnwell Disposal Facility

- 2000 Atlantic Compact Act
- Atlantic Compact only operations started July 1, 2008 after 8 year transition
- Only waste from Member States permitted
- Membership
 - South Carolina
 - New Jersey
 - Connecticut
- No restriction on exporting waste from Atlantic Compact



Slides courtesy of EnergySolutions

Richland Disposal Facility

- Designated NWIC Facility (Accessible to 11 states in NW & RM Compacts - January 1, 1993)
- Operates through sublease agreement with State of WA
- Rate-regulated by WA Utility & Transportation Commission

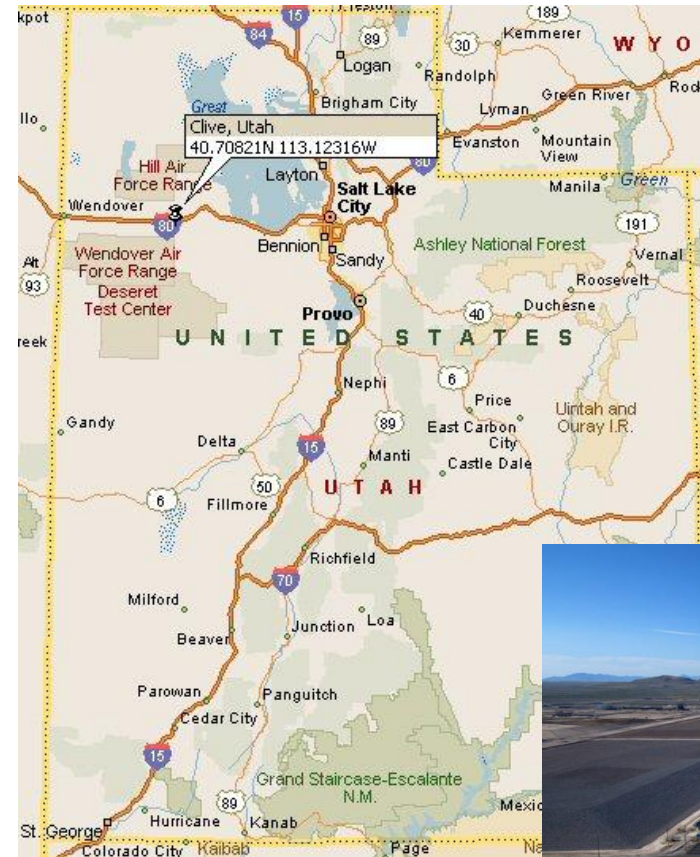


Slides courtesy of Republic Services

Clive Disposal Facility

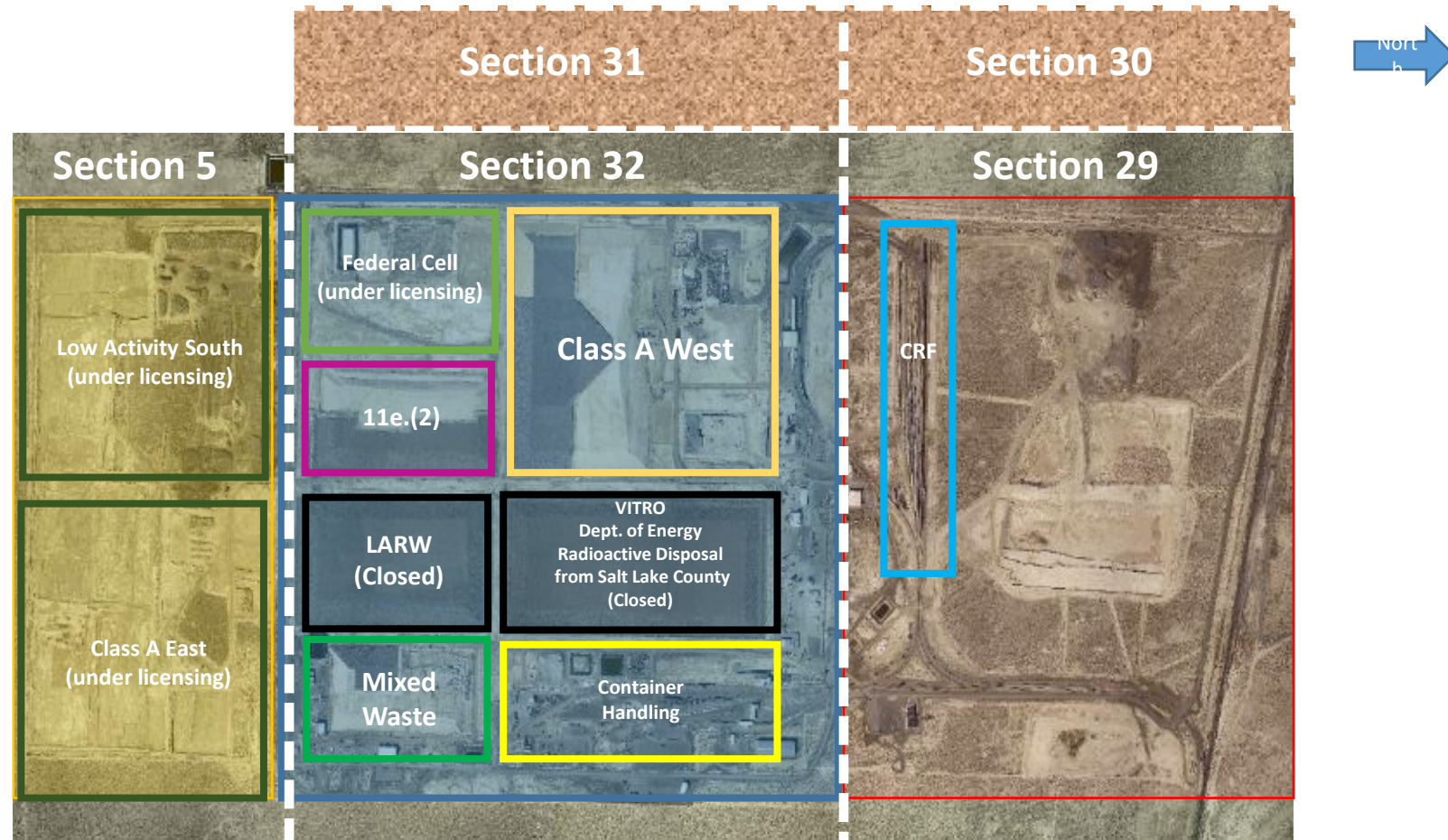
- Not a compact facility
- 640 acres of licensed space
- Class A waste from all compacts with prior export approval
- Mixed waste from all compacts with prior export approval

Third Amended Resolution and Order



Slides courtesy of EnergySolutions

EnergySolutions Proposed Facility



Slides courtesy of EnergySolutions

WCS Disposal Facility

The WCS facility is licensed for LLRW disposal by Texas

- The Texas regulator is the Texas Commission on Environmental Quality (TCEQ)
- Texas has title to the Compact Waste Facility and will take over long-term monitoring following closure
- DOE will take title to the Byproduct Facility and the Federal Waste Facility following closure

Texas Low-Level Radioactive Waste Disposal Compact

- Texas is part of the Texas Low-Level Radioactive Waste Disposal Compact (TLLRWDC) established under the THSC §403.006 and Texas Low-Level Radioactive Waste Disposal Compact Consent Act, Public Law Number 105-236 (1998)

WCS Compact Waste Facility



Slides courtesy of Waste Control Specialists

Waste Control Specialists Resource Conservation Recovery Act (RCRA) Facility



Regulated by TCEQ
Privately-developed and operated
Opened in 1994
Accepts Exempt waste up to about
10% of the Class A limit

Slides courtesy of Waste Control Specialists

WCS Disposal Facility

Texas Low-Level Radioactive Waste Disposal Compact Commission

- Issues agreements to import waste into the Texas/Vermont compact
- Small fee to issue an agreement
- Issues agreement to export waste outside of the Texas/Vermont Compact

Fusion

10 CFR 61:2

- *Waste* means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste **not classified** as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in paragraphs **(2), (3), and (4)** of the definition of *Byproduct material* set forth in **§ 20.1003** of this chapter.

Fusion

10 CFR 20:1003

- (3)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or
- (ii) Any material that—
- (A) **Has been made radioactive by use of a particle accelerator; and**

Fusion

10 CFR 20:2008

- (a) Licensed material as defined in paragraphs (3) and (4) of the definition of *Byproduct material* set forth in §20.1003 may be disposed of in accordance with part 61 of this chapter, even though it is not defined as low-level radioactive waste. Therefore, any licensed byproduct material being disposed of at a facility, or transferred for ultimate disposal at a facility licensed under part 61 of this chapter, must meet the requirements of § 20.2006.
- (b) A licensee may dispose of byproduct material, as defined in paragraphs (3) and (4) of the definition of *Byproduct material* set forth in § 20.1003, at a disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005.

Wayne County judge halts plan to dump Manhattan Project radioactive waste in Van Buren Township

<https://www.newsfromthestates.com/article/wayne-county-judge-halts-plan-dump-manhattan-project-radioactive-waste-van-buren-township#:~:text=Th...>

MICHIGAN | *Brief*

Wayne County judge halts plan to dump Manhattan Project radioactive waste in Van Buren Township

ENVIRONMENT | Aug 07, 2025 | 11:37 am ET | By Jon King

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Summary

- Compacts exist for a reason – NIMBY is real
- Argument of whether or not they compacts have been successful – South Carolina, Nevada, and Washington believe they are
- Four operating sites – all in agreement states
- Fortunate to have these four sites – please use them
- Ten Compacts – all with slightly different requirements
- On-going debate on the authority compacts have with regard to waste going to unlicensed facilities

Thank You

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Low-Level Radioactive Waste Forum

llwforum.org

