TCEQ Status of Waste Management and Disposal

Texas Commission on Environmental Quality
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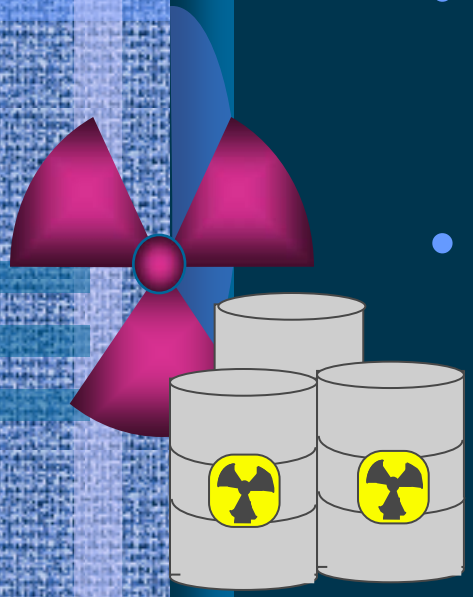
Outline for Presentation

- Introduction
- Background
- Current Waste Management and Disposal Status
- Questions



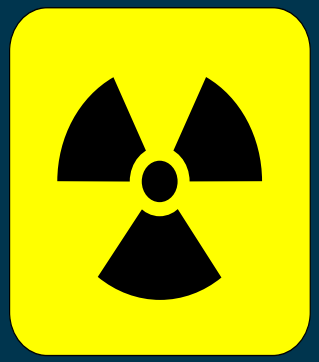
Classification of Radioactive Material in the United States

- **By-Product Material - Uranium and thorium tailings or waste produced from the extraction or concentration of ore (also known as - 11e.(2) waste)**
- **Naturally-Occurring Radioactive Material (NORM)**
- **High-Level Radioactive Waste**
  (Spent fuel from nuclear reactors and weapons waste)
- **Transuranic Waste**
  (Department of Energy & Department of Defense)
- **Low-Level Radioactive Waste (LLRW or LLW)**
  - **Class A (~ 97% of total)***
  - **Class B (~ 2% of total)***
  - **Class C (~ 1% of total)***

*** based on national average**

Definition of LLRW

- Radioactive waste, in general, is classified by the origin or the generating activity/process that resulted in the production of waste
- LLW is defined in state and federal statute
- Definitions of LLW are exclusionary and does not include
  - Spent fuel from nuclear reactor
  - High-level radioactive waste
  - Transuranic waste
  - Uranium or thorium tailings
  - Oil and gas NORM
  - Non-oil and gas NORM waste



Background: Regulations

- Management and disposal of radioactive waste is focused on the risk to people and protection of the environment
- Classification system for LLRW – Texas regulations based on federal regulations in 10 CFR Part 61
- Focus on Performance objectives

Background: Reducing Risk

- Greater risk related to handling and disposal of higher categories of waste means those categories have additional disposal restrictions
  - Texas specifically requires
    - Mandatory use of reinforced concrete containers
    - Additional reinforced concrete barrier
    - Dose modeling of a minimum period of 1,000 years after closure or the period where peak dose occurs
    - Corrective action account as part of financial assurance

Background: Mixed Waste

- Mixed hazardous and radioactive waste requires handling and disposal per LLRW regulations plus those applying to hazardous waste
- Texas regulations allow for dual licensing/ permitting of disposal facility to accept and dispose of mixed LLRW

Radioactive Waste Alternatives

- Options and solutions for waste management in Texas includes alternatives for waste management
  - Possible exemptions for the disposal of certain radioactive material
  - Release of radioactive material into sanitary sewer systems
- Regulatory process to allow disposal exemptions through rulemaking process $\Rightarrow$ 300-day half-life radioactive material
- Landfills permitted under TCEQ RCRA in Texas also receive other radioactive materials

New Policy: Privatizing Disposal

- Changes resulting from 2003 and 2007 Texas Legislation
  - House Bill 1567 – New State policy for LLW disposal
    - Privatization for disposal operations
    - Specific disposal criteria unique to Texas site
    - Waste disposal fees for State's General Revenue
    - Ability to condemn private mineral rights
    - Federal disposal facility could accept mixed LLW
    - Proposed site only in specific region of State
  - Senate Bill 1604 – Regulatory consolidation of radioactive waste management and disposal
    - Allow for 11e(2) by-product disposal at non-mining site
    - Waste disposal fees for State's General Revenue
    - Establish statutory priorities for licensing actions

Regulatory Transfer Legislation

- Senate Bill 1604, 80th Texas Legislature, transferred regulatory authority from the Texas Department of State Health Services to the TCEQ for:
  - Source material recovery licensing (uranium mining surface activities);
  - Commercial radioactive waste storage and processing; and
  - By-product material disposal
  - Added to the authority already at TCEQ for disposal of low-level radioactive waste and non-oil and gas NORM

Siting Criteria

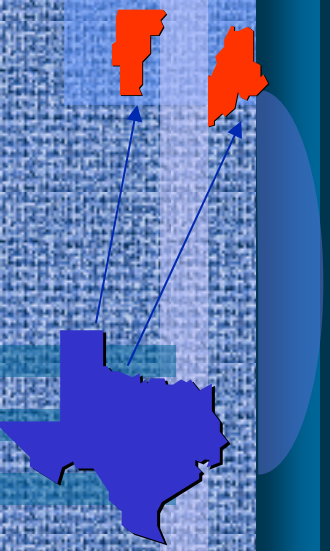
Location in Western Andrews County

Shaded Possible Counties for Site Identified Using:

- *20-inch Rainfall*
- *62 miles from Mexico*
- *Selected River Segments*

Texas Disposal Compact

- Low-Level Radioactive Waste Policy Act
  - States to be responsible for LLRW within borders
  - Allows for states to work in cooperation with other states by way of regional compacts
- Texas originally planned to “go it alone”
- Texas Compact
  - Maine and Vermont
  - Maine withdrew in 2004



Waste Disposal Fee Setting

- TCEQ statutorily charged with setting fees for the disposal of Texas Compact waste

  - Create rate schedules that are fair, just, reasonable and sufficient considering allowable expenses for site operations plus rate of return.

  - TCEQ has the responsibility for auditing and approving rates and fees and collecting the rates and fees.

Waste Disposal Fee Setting

- TCEQ statutorily to set fees based on relative hazard of disposed waste include:
  - Fees for required financial assurance
  - Fees for cost recovery for regulation and other State activities
  - Fee to reasonably support the Texas Compact Commission
  - State fee to Host County - Andrews
  - State fee to Host State - General Revenue Fund

LLW Disposal Licensing

- Two planned facilities under one license
  - Texas Compact Waste Facility
  - Federal Facility Waste Disposal Facility
- Comprehensive LLW disposal facilities
  - 29.66-acre Texas Compact Waste Facility
  - 89.90-acre Federal Facility Waste Disposal Facility
  - 3.29-acre Administrative Area that is common to both facilities

LLW Licensing Action

- Environmental analysis published with the licensing action identified…
  - …additional site information be provided prior to commencement of construction to verify the characterization provided in the application to address data gaps and areas of uncertainty…
- Disposal license conditions were incorporated to require additional site characterization work as part of preconstruction requirements, as well as TCEQ written authorization to begin construction

Update on LLW Licensing

- **January 14, 2009** – TCEQ Commissioners approved an order on the application of Waste Control Specialists for a LLW disposal license
- **May 5, 2009** – Condemnation petitions filed for remaining mineral rights
- **September 9, 2009** – District Court Judge signed final order granting condemnation of remaining minerals
- **September 10, 2009** – LLW disposal license is issued, signed and granted
- **January 12, 2010** – Amendment application received requesting facility and disposal design changes, and environmental monitoring changes

LLRW Licensing Action

- Currently reviewing January 12, 2010 amendment application
- Also pending TCEQ Executive Director's written authorization to commence construction
- License condition requirements triggered during construction and prior to approval to accept waste for disposal and begin operations

Two Facilities: One License

- Compact Waste Facility
  - Land and facility to be owned by State of Texas
  - Authorized Texas Compact LLW acceptance
    - Texas Compact waste that can be accepted - 2.3 million feet^3 in volume and 3.9 million curie in radioactivity
    - Calculates approximately for each projected Class:
      - 90% Class A, 9% Class B, 1% Class C
    - All waste to be over-packed in steel reinforced concrete canisters with the void spaces filled with grout
    - Waste streams evaluated and authorized does include decommissioning waste streams from Vermont and Texas

Two Facilities: One License

- Federal Waste Disposal Facility
  - If waste is disposed, facility to be owned by DOE at decommissioning - signed DOE/TCEQ MOA
  - Acceptance of federal facility LLW and mixed waste
    - Dispose of federal mixed hazardous low-level radioactive waste
    - Planned two federal disposal units
    - Initial volume limitation of 300,000 yards^3 or 8.1 million feet^3 containerized waste
    - Total proposed volume of 26 million feet^3 and total radioactivity of 5.6 million curies

Historic Buried Waste Sites

- Legacy sites with history of radioactive material disposal either done under past regulations or outside of regulations
- Most have been decommissioned and released for unrestricted use
- Examples
  - Hastings Radiochemical
  - M. D. Anderson landfill
  - Houston Gamma Ray

Radioactive Waste at Superfund Sites

- Buried, or otherwise abandoned radioactive material, on sites currently being decommissioned under the Comprehensive Emergency Response Compensation and Liability Act (CERCLA)

- Examples
  - Federated Metals
  - Gulf Nuclear

In Situ Source Material Recovery Regulatory Jurisdiction

- **Texas Railroad Commission:** Responsible for permitting for exploration wells for uranium mining
- **Texas Commission On Environmental Quality:**
  - Responsible for radioactive materials and licensing compliance for uranium mining, processing, and disposal facilities
  - Responsible for Class III Underground Injection Control permitting for uranium mining area, Production Area Authorizations, and aquifer exemptions

Uranium/By-Product Impoundments

- Legacy sites associated with uranium production
- Final stages of decommissioning. Pending review and approval of groundwater Alternate Concentration Limits (ACL's)
- Concurrence of NRC required in order to move to transfer sites to the DOE for long-term management and control
- Examples
  - Rio Grande Resources Panna Maria (Title II)
  - ExxonMobil Ray Point (Title II)
  - ConocoPhillips Conquista (Title II)
  - Falls City Susquehanna (Title I)

By-Product Material Disposal

- WCS submitted a license application to DSHS for below-ground disposal of by-product material on June 21, 2004
- Following program transfer, Radioactive Material License R05807 was issued by TCEQ on May 29, 2008
- Limited Disposal: DOE's Fernald Silo 1 and 2 by-product material was disposed under amended license in Fall 2009

NORM Disposal

July 21, 2005

- TCEQ adopts rules for commercial disposal of NORM waste from public water systems by injection into a Class I injection well.

February 8, 2006

- An application for license to authorize commercial disposal of NORM waste was submitted by Newpark Environmental Services, LP. (NES)

Recent interest in disposal into bedded-salt

Regulation of Waste Management

- Commercial radioactive waste processing such as immobilization, stabilization, solidification, and compaction prior to disposal
- Storage and treatment of LLW and other materials
- Decay in storage as an option for alternative disposal
- On-site processing and storage (not commercial) remains under the regulatory jurisdiction of DSHS

Commercial Waste Processing (and Storage)

- There are currently two Class III commercial waste processors licensed in Texas:
  - Nuclear Sources and Services, Inc.
  - Waste Control Specialists LLC
- As part of the 2007 legislation, the processing/storage licenses were transferred to TCEQ with renewals pending
- TCEQ is currently engaged in renewal process of the WCS and NSSI licenses under TCEQ rules

Questions?