Greater-Than-Class C (GTCC) and Transuranic Waste Disposal

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Cardelia Maupin, Sr. Project Manager,
NMSS/DUWP/LLW
Telephone No: 301-415-4127
Email: Cardelia.Maupin@nrc.gov

Tim McCartin
NMSS/DSFM
Telephone No: 301-415-7099
Email: : Timothy.McCartin@nrc.gov

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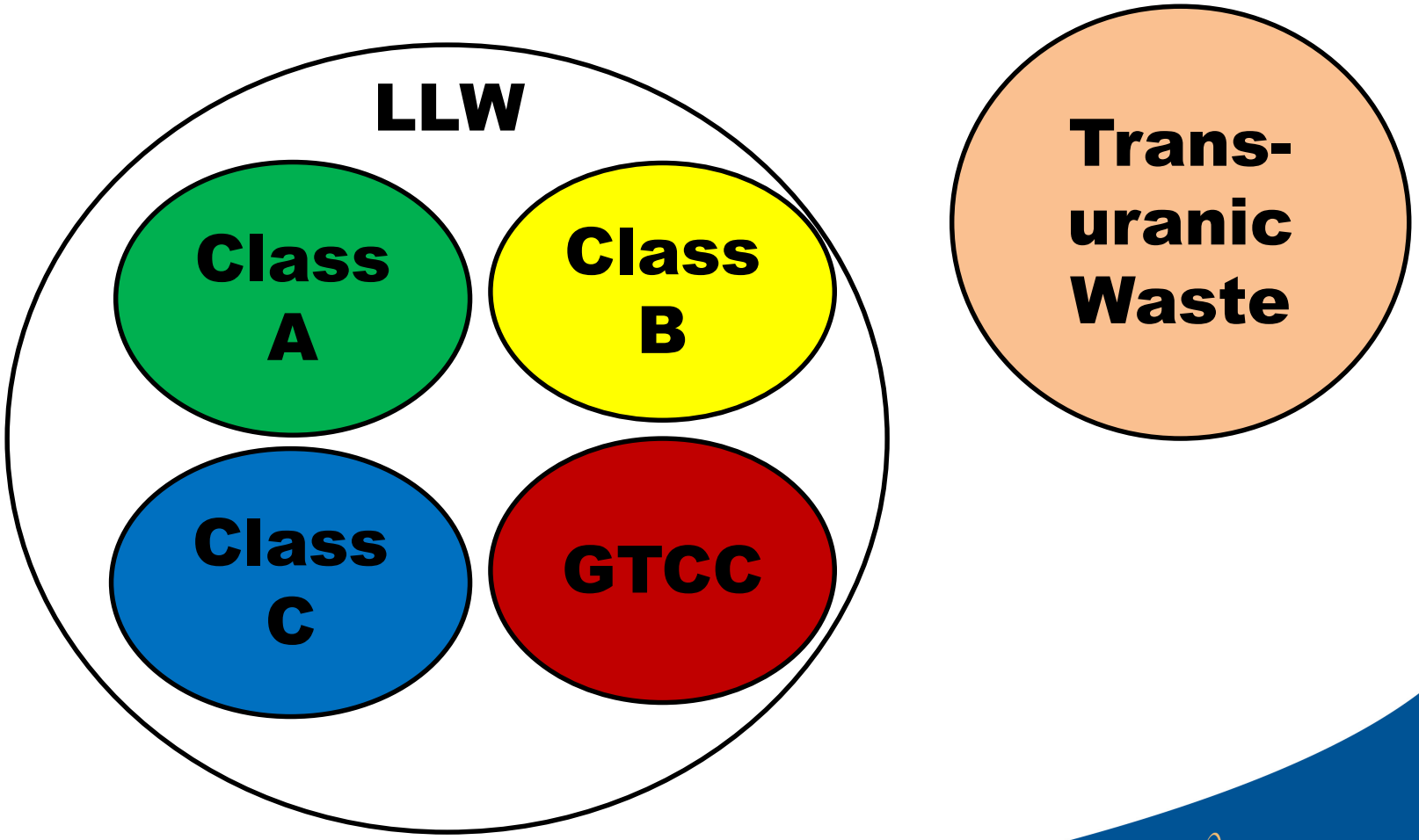
Purpose of Meeting

- Stakeholder participation and involvement
- Identification of various technical issues
- Assist in the development of a regulatory basis for the disposal of GTCC and TRU wastes
- Supports NRC's openness strategies and cumulative effects of regulation initiatives

Low-Level Waste (LLW) and Transuranic Waste



Regulatory Basis for GTCC and Transuranic Wastes

- SECY-15-0094 – Texas request for clarification on Agreement State authority to regulate GTCC
- SRM-SECY-15-0094 - prepare a regulatory basis for the disposal of GTCC waste through means other than deep geologic disposal
- Address transuranic waste in 10 CFR 61.2 “Definitions”
- SRM-SECY-16-0106 – due 6 months after publication of Part 61 supplemental proposed rule

Next Steps

Complete Part 61 Supplemental Proposed Rule

Prepare Regulatory Basis with Public Workshops

Potential Part 61 Rule for GTCC and Transuranic Waste Disposal

Draft Technical Analysis

- Assist in the identification of potential hazards, for example
  - inventories
  - security

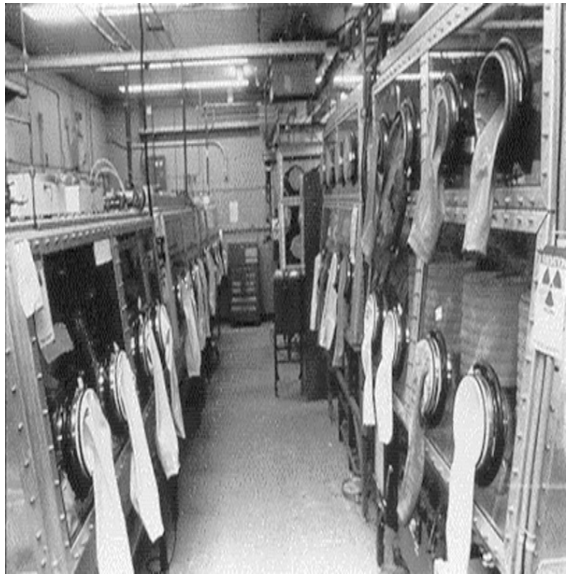
- Assist public to respond to NRC staff questions

Three categories of GTCC waste:

- activated metals, sealed sources, and other waste

Reactor Vessels

Sealed Sources



Glove Boxes

Activated Metals

- Metal components from nuclear reactors are most significant source
- Surface contamination on metal surfaces
- Activated radionuclides throughout metal
- Short-lived radionuclides generate heat
- Some transuranic radionuclides present in surface contamination

Sealed Sources

- Irradiators typically used in medical applications (e.g., hospitals, universities, research)
  - short lived sources (Cs-137 – 30 year half-life)
  - transuranic radionuclides (e.g., Pu isotopes)
- Fissile radionuclides present (Pu-239)
- Short-lived radionuclides generate heat

‘Other’ Waste

- Variety of potential sources, for example:
  - potential exhumation of West Valley waste
  - production of radioisotopes for nuclear imaging procedures (e.g., Mo-99 production)
- Fissile radionuclides present from Mo-99 production (e.g., Pu-239)

GTCC Technical Considerations

- Thermal Output
- Gas Generation
- Fissile Material
- Long-lived Daughter (Progeny)

Radionuclides of Potential Interest based on Draft Analysis (depends on analysis assumptions)

Hazard	Activated Metals (Commercial Reactors)		Sealed Sources		Other Waste (Mo-99 Production)	
	500 yrs	5,000 yrs	500 yrs	5,000 yrs	500 yrs	5,000 yrs
Off-site Dose	Pu-239	Pu-239	Am-241, Pu-239 Cs-137	Pu-239, Am-241	Pu-239	Pu-239
Thermal Output	Ni-63	None	Am-241	None	None	None
Fissile Material	None	None	Pu-239	Pu-239	U-235	U-235
Gas Generation	Ni-63	None	Am-241	None	None	None
Intruder Dose (shallow)	C-14, Ni-59, Nb-94, Ni-63	C-14, Ni-59, Nb-94, Ni-63	Am-241	Pu-239	Pu-238, Pu-239, Pu-240, Am-241	Pu-239, Pu-240
Intruder Dose (deep)	None	None	Am-241	Pu-239	None	None

Three Questions

1) What are the important radionuclides that need to be considered for the disposal of the GTCC and transuranic wastes?
2) How might GTCC and transuranic wastes affect the safety and security of a disposal facility during operations (i.e., pre-closure period)?
3) How might GTCC and transuranic wastes affect disposal facility design for post-closure safety including protection of an inadvertent intruder?

Stakeholder Outreach and Involvement

- Updated information on GTCC and transuranic wastes found on NRC Website:

  https://www.nrc.gov/waste/llw-disposal/llw-pa/gtcc-transuranic-waste-disposal.html

- *Federal Register* Notice to Conduct GTCC and Transuranic Waste Scoping Meeting and Request for Comment (83 FR 6475): Feb. 14, 2018

How to Provide Comments

- *Federal Register* notice (83 FR 6475) provides various methods of submitting comments:
  - Federal Rulemaking Website:

    Go to http://www.regulations.gov and search for Docket ID NRC-2017-0081
  - Email comments: Rulemaking.Comments@nrc.gov
  - Fax comments: 301-415-1101
  - Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff
  - Hand deliver comments: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. (EST) Federal workdays; telephone: 301-415-1677.

Comment period ends April 16, 2018

For Additional Information:

- Federal Rulemaking Website:

  Go to http://www.regulations and search for Docket ID **NRC-2017-0081**

- NRC's Public Web Site for GTCC:

  https://www.nrc.gov/waste/llw-disposal/llw-pa/gtcc-transuranic-waste-disposal.html

- NRC Contact:
  - Cardelia Maupin – Sr. Project Manager

    301-415-4127; Cardelia.Maupin@nrc.gov

Questions?