

# *EM Citizen's Advisory Board*

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## *Update for Greater-Than Class C Environmental Impact Statement*

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# ***What is the DOE GTCC EIS?***

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- DOE is preparing an Environmental Impact Statement (EIS) for disposal of Greater-Than-Class C Low-Level Radioactive Waste (GTCC LLRW)
  - Document number DOE/EIS-0375D
  - Evaluate potential alternatives involving various disposal methods
  - Evaluate six federally owned sites and generic commercial sites
  - Find more information at <http://www.gtcceis.anl.gov/>



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# ***Greater-Than-Class C Low-Level Radioactive Waste and GTCC-like Waste***

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**Greater-than-Class C (GTCC) low-level radioactive waste (LLRW)** is generated by U.S. Nuclear Regulatory Commission (NRC) licensees or Agreement State licensees that contains radionuclide concentrations that exceed NRC limits for Class C low-level waste as defined in 10 CFR Part 61.

**GTCC-like waste** –GTCC-like waste refers to radioactive waste that is owned or generated by the DOE GTCC-like waste

- consists of LLRW

- potential non-defense-generated transuranic waste



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## *GTCC Low-Level Radioactive Waste and GTCC-like Waste (continued)*

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- **Sealed sources** consist of small quantities of highly radioactive materials enclosed in metal containers.

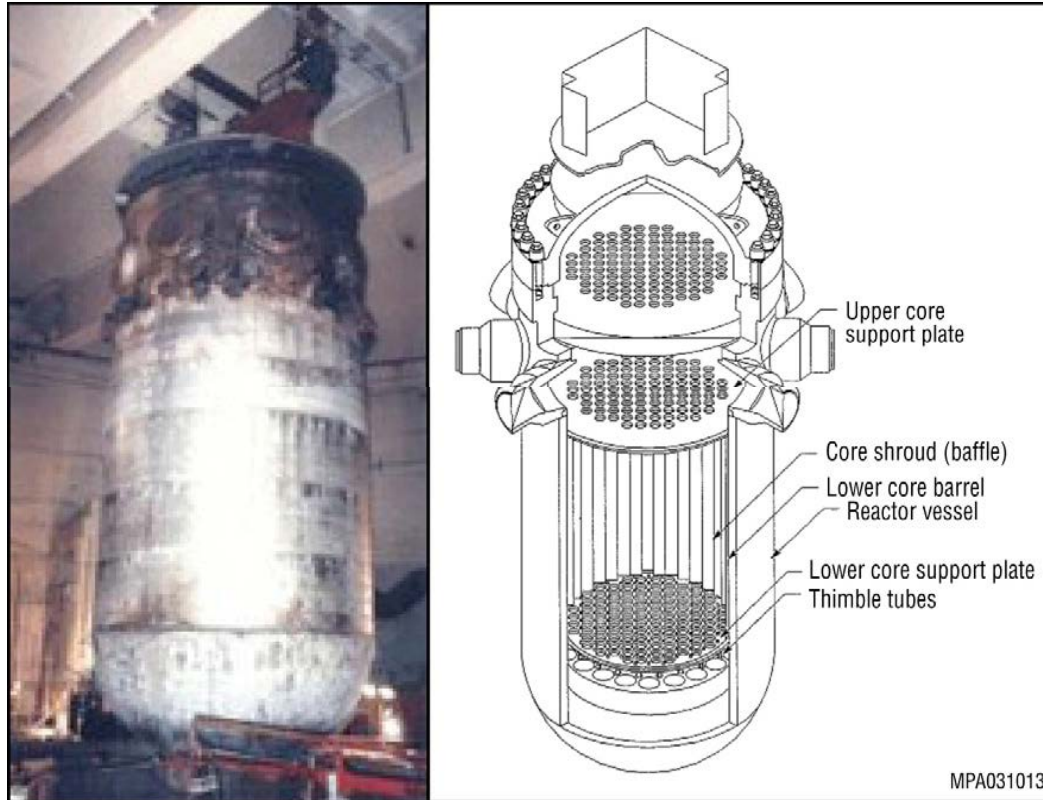


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# *GTCC Low-Level Radioactive Waste and GTCC-like Waste (continued)*

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**Activated metals** result from decommissioning nuclear reactors.



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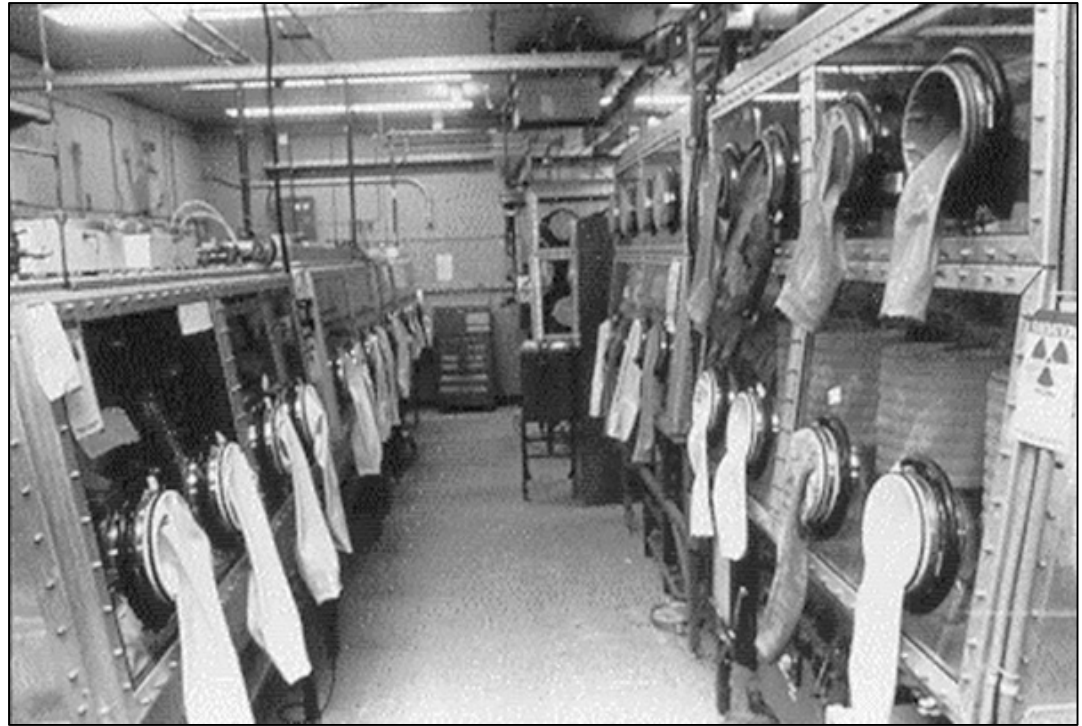
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# *GTCC Low-Level Radioactive Waste and GTCC-like Waste (continued)*

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**Other Waste** – results from the other DOE missions

- Domestic production of medical isotopes,
- Power systems supporting space exploration
- Environmental cleanup of commercial and DOE sites



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# ***Proposed Action, Purpose, and Need***

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**Proposed Action:** Construct and operate a new facility or facilities or use an existing facility for the disposal of GTCC LLRW and GTCC-like waste

## **Purpose and Need:**

- No existing disposal facility for GTCC waste
- Federal Government responsibility under section 3(b)(1)(D) of the Low-Level Radioactive Waste Policy Amendments Act of 1985
- Responsive to National Security Concerns: disused sealed sources
- Supports U.S. Programs: medical isotope production, clean energy, deep space exploration, and other programs
- Implements Environmental Stewardship: DOE and commercial cleanup commitments

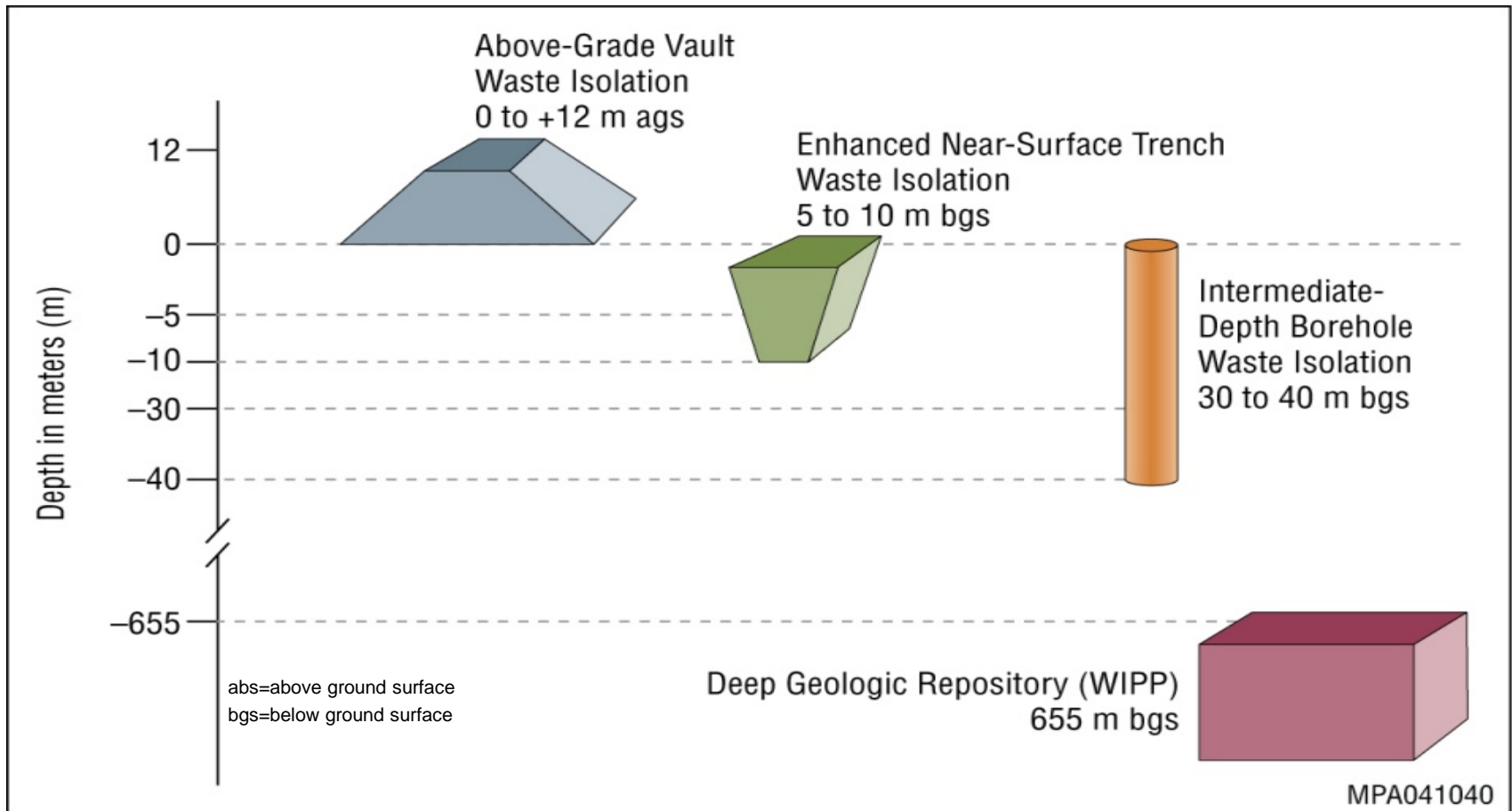


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# Range of Alternatives Reflect Proposed Disposal Methods



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# *Locations Being Considered*



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## ***What is the preferred alternative?***

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- DOE is evaluating various considerations for selection of a preferred alternative or alternatives.
- The preferred alternative may be a combination of alternatives based on
  - waste type (e.g., activated metals, sealed sources),
  - waste generation timing, and
  - potential impacts on human health and the environment from the waste types and disposal methods analyzed.



# ***Draft EIS Analysis: Scope***

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## Resource Areas Evaluated in Draft EIS

1. Climate, Air Quality, and Noise
2. Geology and Soils
3. Water Resources
4. Human Health
5. Ecology
6. Socioeconomics
7. Environmental Justice
8. Land Use
9. Transportation
10. Cultural Resources
11. Waste Management



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# *Public Involvement*

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- Public hearings were held at these locations between 4/19/2011 and 5/25/2011:
  - North Augusta, South Carolina
  - Carlsbad, New Mexico
  - Albuquerque, New Mexico
  - Santa Fe, New Mexico
  - Las Vegas, Nevada
  - Idaho Falls, Idaho – 5/11/2011
  - Pasco, Washington
  - Portland, Oregon
  - Washington, DC



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## *Comment Response*

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- DOE received over 5,000 comments from over 500 individuals and organizations including State and local governments, Tribal Governments, non-government organizations and private citizens.
- Sorting and consolidating comments similar in nature
- Developing responses to the comments received
- DOE sites are responding to comments that specifically apply to their site.



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## ***Latest News***

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- On September 8, 2011, the Draft GTCC EIS public hearing transcripts became available to the public.
- The transcripts can be viewed or downloaded from the [Public Hearings](#) page of this Web site, <http://www.gtcceis.anl.gov/> .



# *Considerations for Preferred Alternative(s) for Final EIS*

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- *Public comments on Draft GTCC EIS*
- *Waste type considerations:* radionuclide inventory, waste form stability, physical characteristics, and availability for disposal
- *Disposal method considerations:* inadvertent human intrusion, construction and operational experience, post-closure care, and cost
- *Disposal location considerations:* potential human health impacts (including cumulative impacts); cultural resources and tribal concerns; laws, regulations, and other requirements

• Preferred alternative could be a combination of two or more alternatives, based on the considerations above



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# Next Steps

- Complete Comment Resolution
- Develop Final EIS with preferred alternative in consideration of public comments
- Issue Final EIS – late 2012
- Issue Report to Congress for Congressional action
- Issue Record of Decision - 2013
- Implement selected alternative or alternatives
  - Some alternatives may require new or modification to existing federal legislation for implementation



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# Back-up Slides



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# *Differences Between the GTCC and RH-LLW Disposal Proposed Actions*

| Characteristics      | GTCC   | RH-LLW  |
|----------------------|--|---|
| Scope                | New National Repository for all U.S. GTCC and GTCC-Like Wastes   | Replacement Capability for RH-LLW Generated at the Idaho Site   |
| Waste                | <ul style="list-style-type: none"> <li>• 12,000 m<sup>3</sup></li> <li>• 160 m Curies</li> <li>• Unlimited Transuranic Radionuclides, i.e. Pu.</li> <li>• 170 m<sup>3</sup> Hazardous Chemicals</li> </ul> | <ul style="list-style-type: none"> <li>• &lt; 2400 m<sup>3</sup></li> <li>• &lt; 4 m Curies</li> <li>• No Transuranics</li> <li>• No Hazardous Chemicals</li> </ul> |
| Design               | <ul style="list-style-type: none"> <li>• Above – grade vault</li> <li>• Intermediate Depth – Boreholes</li> <li>• Near Surface Trench</li> </ul>   | <ul style="list-style-type: none"> <li>• Set Concrete Liners with engineered features specifically for INL site and waste conditions</li> </ul>                     |
| Operating Experience | No Prior Experience  | 17 Years of Safe and Efficient Operating History at INL   |



# ***Proposed Disposal Methods***

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- Disposal Method Considerations in Draft GTCC EIS
- NRC regulations require GTCC LLRW to be disposed in a geologic repository, but allows for alternative land disposal methods to be considered
- Draft EIS assumes protection of the inadvertent human intruder by institutional controls, disposal depth, control of waste concentrations, waste form stabilization, and intruder barriers



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# ***Draft EIS Analysis: Scope***

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- Evaluated 11 environmental resources areas and potential cumulative impacts
- Potential impacts analyzed for construction, operations, and post-closure phases
- EIS describes models, input parameters, key assumptions, and uncertainties
- For Alternatives 2-5 (geologic repository, borehole, trench, and vault):
  - Analysis assumes that the total waste inventory would be disposed at a single disposal location
  - EIS structured so that decisions on disposal method(s) or location(s) could be by waste type



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# *Alternatives Evaluated*

| Sites         | Geologic Repository | Borehole | Trench | Vault |
|---------------|---------------------|----------|--------|-------|
| WIPP          | ✓                   | NA       | NA     | NA    |
| Hanford       | NA                  | ✓        | ✓      | ✓     |
| INL           | NA                  | ✓        | ✓      | ✓     |
| LANL          | NA                  | ✓        | ✓      | ✓     |
| NNSS          | NA                  | ✓        | ✓      | ✓     |
| SRS           | NA                  | NA       | ✓      | ✓     |
| WIPP Vicinity | NA                  | ✓        | ✓      | ✓     |



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