

**Exploring Authorized Limits for
Trace Rad Contaminated Laboratory Waste**

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INTRODUCTION

- ORNL generates some low activity lab waste streams that may potentially qualify for treatment and disposal at TSDF's that do not have a radiological license (i.e. Exempt Quantities).
 - Example: Excess neutron scattering samples of chemical composition
- ORNL is currently exploring this option, patterning an approach successfully used by DOE Portsmouth for used oil sent to a commercial TSDF in Texas.
- Release of this material can be authorized via the Authorized Limit process in DOE Order 458.1, *Radiation Protection of the Public & Environment*.
- Must meet commercial TSDF WAC or require regulatory agency approval (e.g. Texas Commission on Environmental Quality).

Envisioned pathway

- Assemble a proposed packaging arrangement (such as 500 slightly irradiated samples in a 30 gallon drum) that is representative of the disposal package.
- Use proposed packaging information as the basis for developing an Authorized Limit request to DOE under DOE 458.1, *Radiation Protection of the Public & Environment*.

Authorized Limit step

- Perform dose rate assessment and other calculations as needed for the Authorized Limit package.
- Obtain DOE HQ HSS Review of draft Authorized Limit package.
- Obtain DOE Program approval of Authorized Limit.

DOE Approval of the Authorized Limit completes step one of the process

Agreement State Concurrence

- Some TSDFs require an Exemption Concurrence letter before considering acceptance of low activity waste to their facility (may be a RCRA operating permit condition).
- The TSDF, if needed, requests an exemption concurrence letter from the applicable state agency (e.g. Texas Commission on Environmental Quality).
 - Must demonstrate that State Exemption Limitations/Standards will be met, including radiological quantification methodology
- Attach the DOE approved AL package as supporting documentation.

Successfully obtaining any needed State Concurrence (TSDF Approval) completes step two of the process

CONCLUSION

- The use of a 458.1 Authorized Limit process has been successfully demonstrated by DOE Ports and other sites to release low-activity waste to a non-rad TSDF.
- This may offer a significant cost savings opportunity to generators of select very low activity waste streams.
- ORNL is pursuing this for select low-activity waste, working with DOE HQ HSS to guide us through the process.

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