

WIPP Space Faces TRU Waste Disposal Limits: THE VOLUME REDUCING SOLUTION

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Transuranic (TRU) waste packaging for removal from a glovebox has for many years involved the use of bags as the primary containment. In many cases, many hydrogenous layers of bags, yards of tape, and multiple filters are added to the waste stream in order to get the TRU waste

into the final 55 gallon drum package to be shipped and buried at the Waste Isolation Pilot Plant (WIPP).

The WIPP is currently limited to a total finite disposed volume of Contact Handled (CH) and Remote Handled (RH) TRU waste. As of early 2014 over half of the allotted WIPP volume

had been filled with mainly CH-TRU waste. Based on current bag operation packaging methods used, the Department of Energy's (DOE) remaining CH and RH waste will not fit in the remaining limited WIPP space. Bag operations, can be performed safely by good operators following tedious repetitive processes and many Administrative Safety Controls. Since the bag is the only confinement layer between the contamination and the operator, contamination incidents can occur. Bag-out operations require close proximity to the waste to perform the process. With some waste streams, this close to waste proximity increases operator radiation dose.

Central Research Laboratories (CRL), based in Red Wing Minnesota, who for many decades has developed proven engineered material transfer solutions based around their Rapid Transfer Port (RTP) technology, has worked with DOE sites to develop a TRU Waste Management Solution. The solution is a single filtered large Polyethylene (PE) or Stainless Steel (SST) Rapid Transfer Port container in a standard Department of Transportation (DOT) 7A, Type A drum, which allows for loading of TRU waste directly from the operational glovebox without the use of bags, sleeves or tapes to provide leak tight containment. All operator interventions to connect and disconnect a drum to and from the glovebox are achieved in an upright ergonomic position by one (1) operator in less than three (3) minutes. Minimal As Low As Reasonably Achievable (ALARA) levels are achieved during connect and disconnect of the drum, due to the engineered safety controls of the RTP.

The CRL RTP solution allows glovebox or re-packaged TRU waste to be safely transferred to the final 55 Gallon drum container without additional bags or tape. The high diffusion coefficient filter on the CRL RTP 55G container and elimination of added hydrogenous packaging, improves the Decay Heat Limit (DHL) per drum for most TRU waste types compared with bagged drums, and in most cases allows more TRU waste to be loaded per drum. Inorganic TRU waste materials can be packaged directly into the CRL RTP SST drum container to the maximum DHL and Fissile Gram Equivalent (FGE) allowable for a drum.

TRAMPAC approved TRU waste packaging of CH and RH TRU waste can be accomplished in a safer, cost effective manner without adding any additional packaging materials to the waste stream, thus increasing the chance of placing all DOE's legacy and to be generated TRU waste in the remaining WIPP space.

Waste Management Solutions



Waste Drum Transfer System

CRL's Waste Drum Transfer System (WDTS) was developed to address the need for a safe, efficient method of transferring waste from gloveboxes and hot cells.

- Mitigates contamination incidents to facilities and operators
- Minimizes additional hydrogenous waste
- SST liner can maximize high wattage non-hydrogenous drum loading

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