

Mobile WIPP-Certified Standard Waste Box Counter



Standard Waste Boxes Beneficial to the Site

In order to reduce costs associated with size reduction, waste characterization, and material handling, deactivation and decommissioning (D&D) programs at the Rocky Flats Environmental Technology Site (the Site) are adopting the use of standard waste boxes (SWBs) as the primary waste container for disposing of transuranic-contaminated equipment. SWBs can handle larger pieces than 55-gallon drums, thereby minimizing the amount of size reduction required and reducing the certification costs as fewer containers undergo certification (one SWB can contain the waste of seven 55-gallon drums).

Although the Waste Isolation Pilot Plant (WIPP) has an existing certification program to assay 55-gallon waste drums, a certification program for SWBs has not been developed. Funding from the Accelerated Site Technology Deployment (ASTD) project, along with other leveraged funding, will allow for a mobile SWB assay system to be procured, certified to WIPP waste acceptance criteria, and deployed in support of the Rocky Flats Closure Project.

Many large pieces of equipment need to be size reduced for ultimate shipping and disposal. Trying to size reduce all of this material so that it can fit into 55-gallon drums is costly, labor intensive, and time consuming. In addition, the paperwork associated with managing large numbers of containers is significant in terms of time, labor, and cost. Finally, the expected WIPP assay standards for SWBs are more stringent than those currently in use at the Site. The current Site waste box counter does not have the sensitivity nor accuracy to meet these standards and become WIPP certified. Los Alamos National Laboratory (LANL) and a number of commercial companies have developed equipment to assay large, variously sized waste containers that will perform to these expected new WIPP crate assay standards.

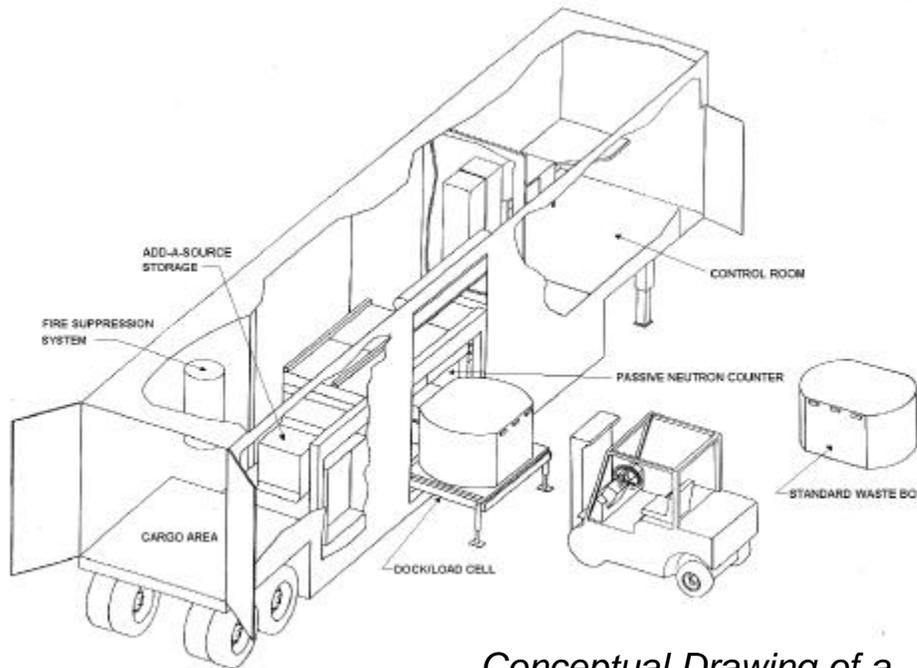
Mobile SWB Counter Description

The mobile SWB counter will be a self-contained, trailer-mounted system that can be easily transported around the Site and between Department of Energy (DOE) sites. The

SWB Counter, pg. 2

system will be based on passive neutron coincidence detection assay technology, which is similar to the technology that has been successfully used for WIPP-certified drum counters. This technology is expected to provide performance superior to active neutron, differential die-away

WIPP and meet requirements of the Site's safeguards organization.



Conceptual Drawing of a Mobile SWB Counter

Standard Waste Boxes Minimize the Amount of Size Reduction Required and Reduces Costs

Use of this technology will result in avoiding costs associated with waste handling and packaging. Certification of the Super-HENC to WIPP waste acceptance criteria eliminates the need for waste assay subsequent to initial packaging and assay associated with D&D activities. It is estimated that \$4 million in savings has resulted from the Building 779 D&D program using SWBs in place of 55-gallon drums when disposing of its plutonium-contaminated equipment. Building 779 represents less than 10% of the Site's glovebox D&D work. Therefore, the Site has placed a high priority on the purchase and certification of a crate counter

instruments, because it does not suffer the strong matrix interference effects of the active neutron methods.

The system will be comprised of proven crate counter components associated with high efficiency neutron counter (HENC) technology. HENC will be re-engineered and integrated to accommodate SWBs and the project mobility requirements. This new system will be called the "Super-HENC" and will be deployed consisting of elements of the HENC drum counter and other LANL-developed components that are incorporated into existing LANL-built instruments. The Super-HENC provides five times the sensitivity and two times the matrix correction over the HENC.

The anticipated increase in throughput and sensitivity will reduce the programmatic risk of certifying the SWBs for

capable of accurately assaying SWBs for WIPP.

The mobile SWB counter will enable the Site to meet the more stringent standards that WIPP is expected to impose. Also, handling and paperwork associated with certification will be reduced by a ratio of seven to one. In addition, a counter with the ability to assay mixed material-type matrices will allow the Site to relax the rigid waste segregation controls that are now required. Reduced segregation will lower labor and administrative costs.

The mobile WIPP-certified SWB counter is one of multiple technologies currently included in the Rocky Flats ASTD project. This project is jointly funded by the Site and the DOE Office of Science and Technology (EM-50). The other technologies in the ASTD project include the

SWB Counter, pg. 3

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM™) and size reduction cutting tools for contaminated gloveboxes and equipment.

EM-50 has provided \$3 million in support of the Site's ASTD project. Of this \$3 million, approximately \$1.5 million will be used to procure the WIPP-certified mobile crate counter. Additional Site costs associated with procurement and implementation of the system are anticipated to exceed \$2 million. Leveraging will be provided from the WIPP certification programs at LANL and the Site, from WIPP, and from commercial firms. The mobile SWB counter should be deployed at the Site during the second quarter of fiscal year 2000.

For more information about deployment of the SWB Counter at Rocky Flats contact:

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U.S. Department of Energy

Make It Safe. Clean It Up. Close It Down.

*For further information about Rocky Flats*

Contact DOE Communication at (303) 966-5993, or Kaiser-Hill Communication at (303) 966-2882, or toll free at (800) 269-0157
(press *82882# when you hear the automated attendant)

Also, additional information about Rocky Flats is available on the internet at: <http://www.rfets.gov>

New: 02/99 Fact Sheets will be updated periodically as The Closure Project progresses.