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Title: NNSA Model 435-B & 380-B Type B (U) Packaging

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Intended for: waste management symposium 2024, 2024-03-10/2024-03-14 (Phoenix, Arizona, United States)
One document is to have as handouts. This document was previously LAUR 23-28870. We have made modifications by deleting pages/images/text and replacing with new pictures. The other document are pictures that will be displayed on the booth table.

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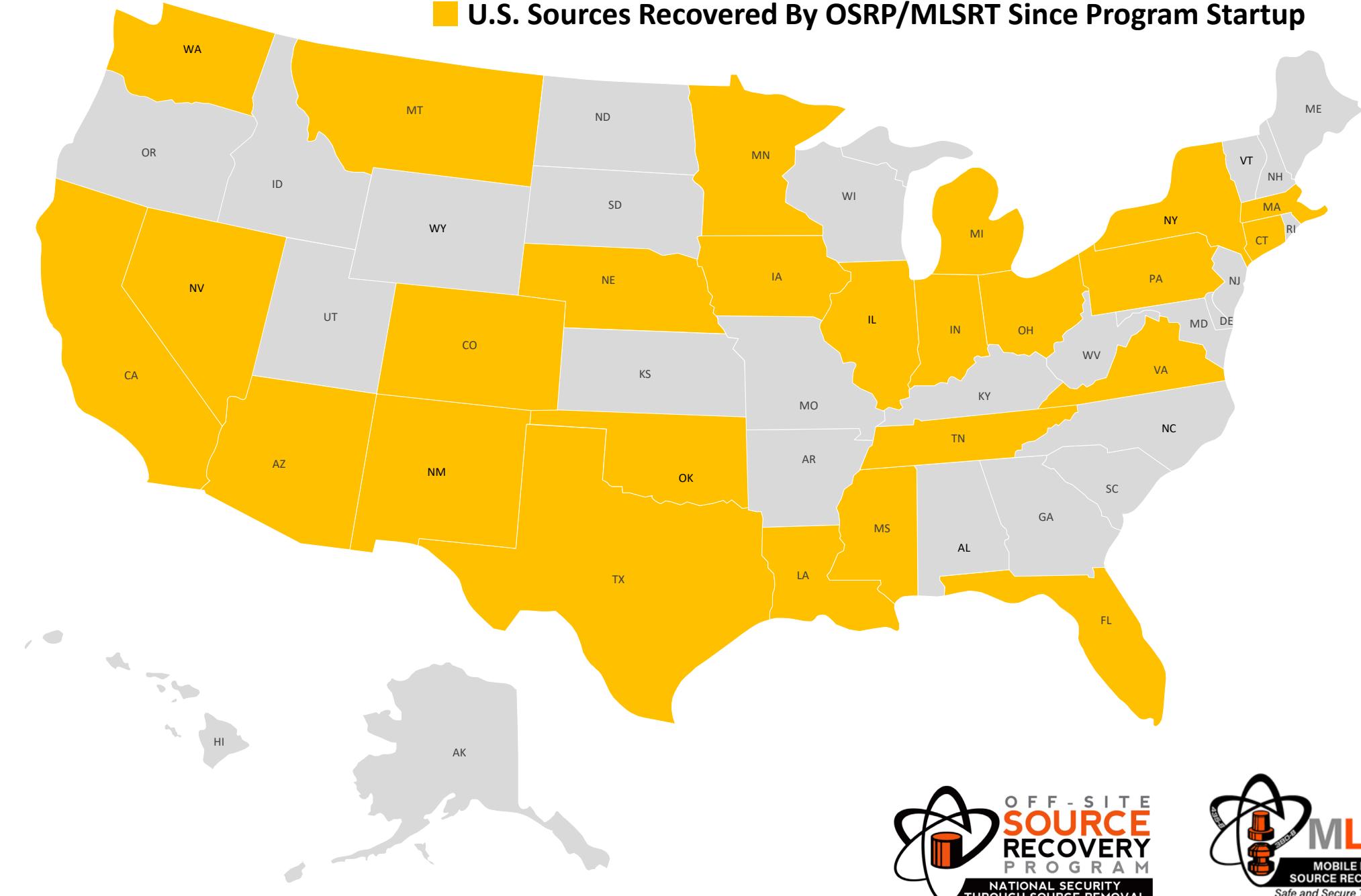
NNSA Model 435-B & 380-B Type B (U) Packaging



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U.S. Sources Recovered By OSRP/MLSRT Since Program Startup



◆ MLSRT Mission

- Manage operations and shipping of Type B Casks
- Manage Mass Spectrometry & Pressure Change Leak Testing of Type B Casks
- Provide logistics support to customers
- Provide operational engineering support
- Above all, Safe and Secure Type B Operations

◆ 380-B and 435-B Type B(U) Packaging

- Container Specifications
- Safety/Operational Features
- Source/Activity Payload Capabilities
- Versatile Shipping Configurations

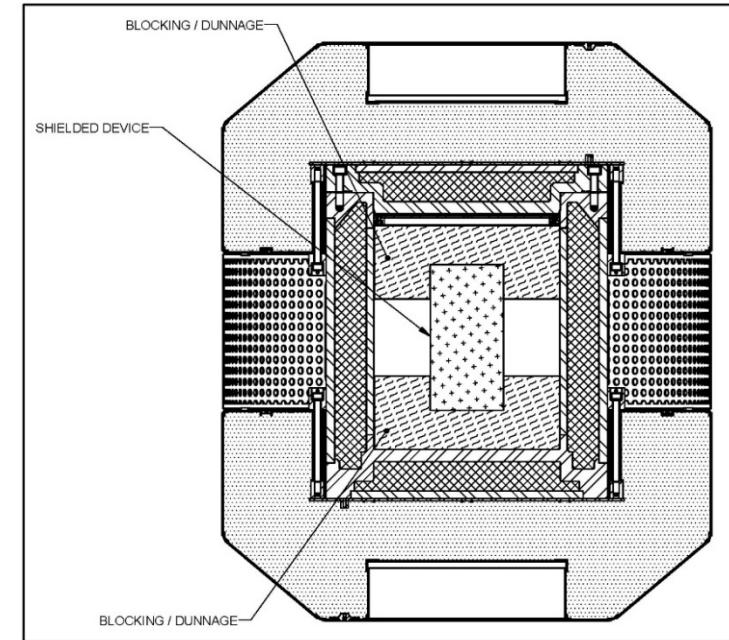
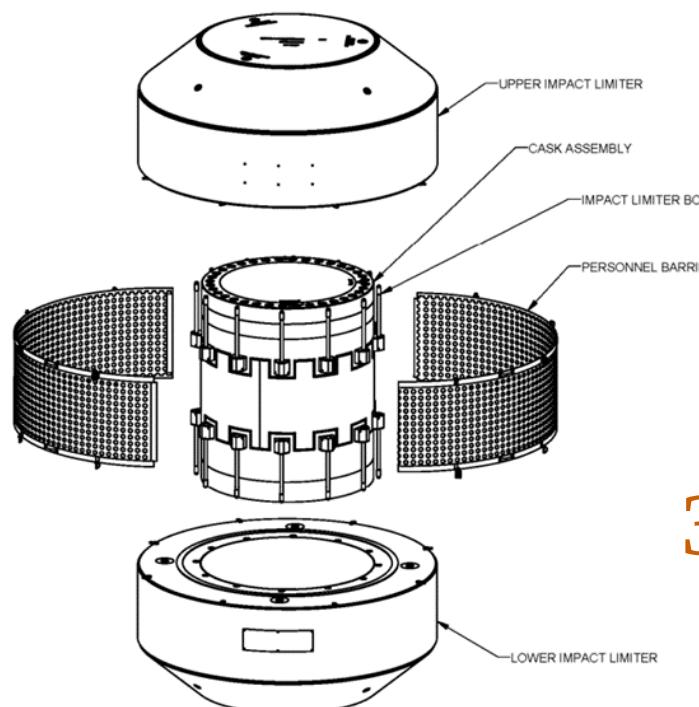


380-B Type B(U) Packaging

- ◆ NRC Certificate – USA/9370/B(U)-96

- ◆ Package Specifications

- 118.2" tall, 100" in diameter
- Empty shipping weight: 55,000 lbs.
- Max Payload capacity 12,000 lbs.
- Max total shipping weight: 67,000 lbs.
- Internal Cavity Dimensions:
 - 45-3/4" tall x 38" diameter
- Total Shielding Thickness:
 - Lid: 10" inches
 - Body 9-3/4" inches



380-B Components

380-B Cask Payload Capabilities

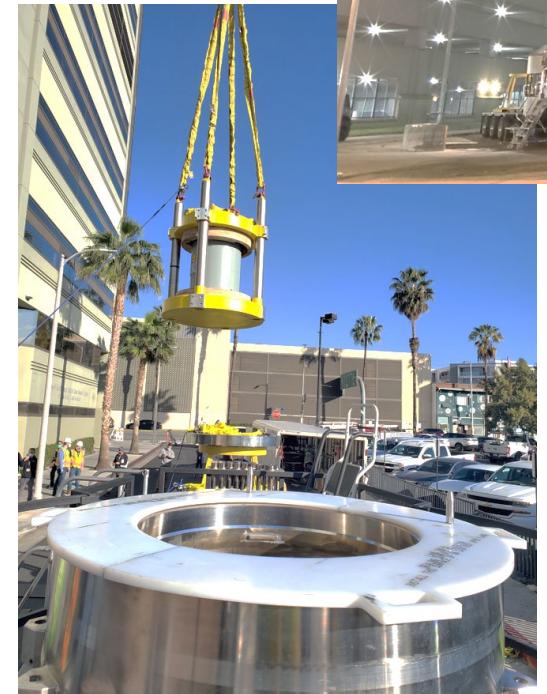
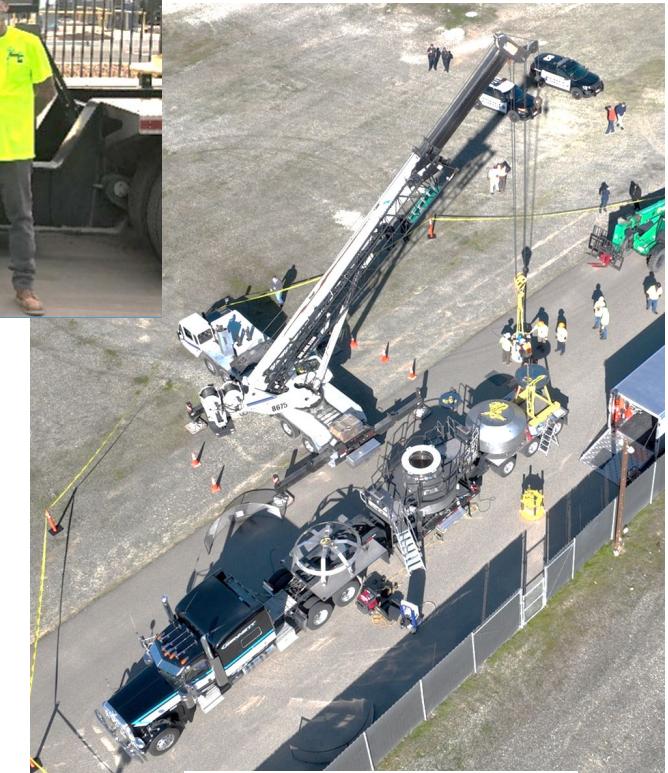
- ◆ Maximum Decay Heat: 205 Watts
- ◆ Shipping Methods:
 - Ground, Air and Water (Vertical on Longitudinal Axis)



Nuclide	Maximum Activity
Co-60	7,702 Ci
Cs-137	40,675 Ci
Sr-90	30,606 Ci
Ir-192	33,333 Ci
Ra-226 (no Be) ^⑤	1,101 Ci
Ra-226Be ^⑤	4.67 Ci

Payload Source Nuclides

MLSRT 380-B Recovery Operations



435-B Type B(U) Packaging

- ◆ NRC Certificate – USA/9355/B(U)-96
- ◆ Specifications
 - 83" tall, 70" in diameter
 - Max shipping weight: 10,100 lbs.
 - Empty shipping weight: 4,940 lbs.
 - Cavity dimensions:
 - 60.3" tall x 43.5" diameter
- ◆ Payloads
 - Long Term Storage Shield (LTSS), Disposal Canisters, Shielded Devices



435-B Cask Payload Capabilities

- ◆ Maximum Decay Heat: 200 Watts
- ◆ Shipping Methods:
 - Ground, Air and Water (Vertical on Longitudinal Axis)



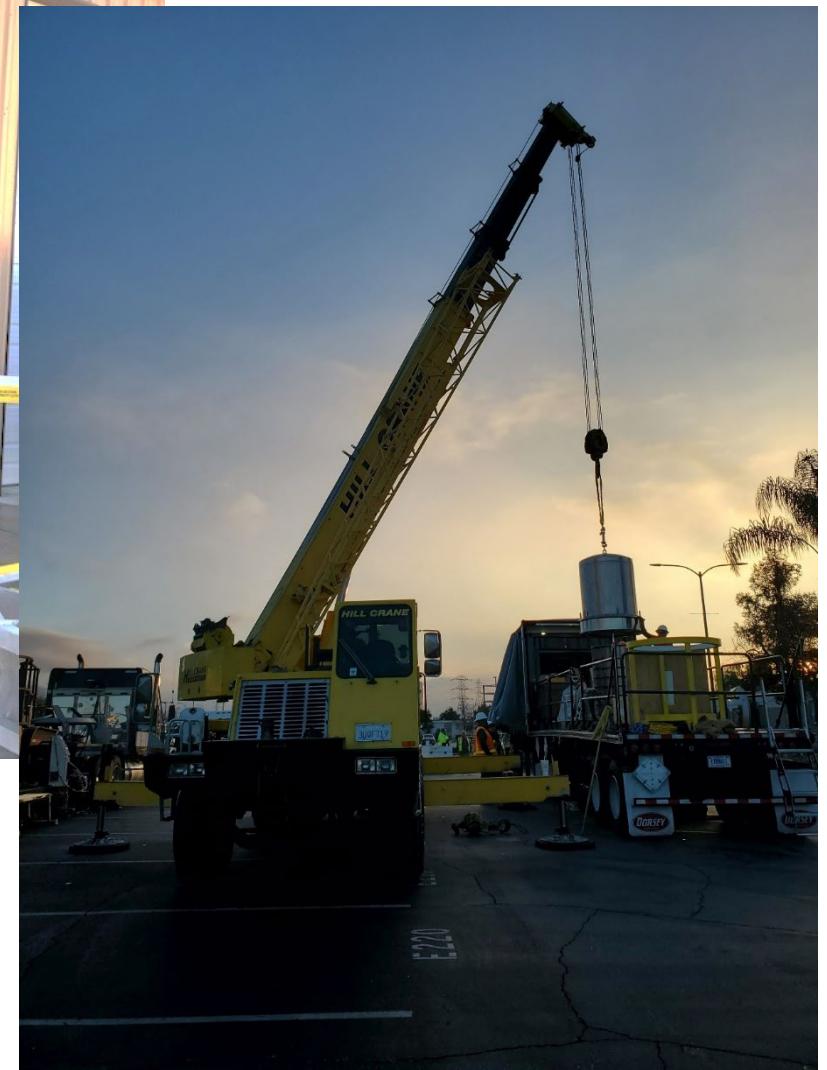
U.S. Air Force photo by Tech. Sgt. Howard Blair - <http://www.af.mil>,
<https://www.af.mil/News/Photos/igphoto/2000031028/mediaid/50787/>

Nuclide	Maximum Activity, LTSS	Maximum Activity, Disposal Canister
Co-60	12,970 Ci	12,970 Ci
Cs-137	14,000 Ci	27,000 Ci
Sr-90	1,000 Ci	1,000 Ci
Ra-226 (no Be) ^⑤	20 Ci	20 Ci
Ra-226Be ^⑤	1.2 Ci	4.88 Ci
Am-241 (no Be) ^⑥	1,000 Ci	No americium or plutonium allowed
Am-241Be ^⑥	6.6 Ci	
Pu-238 (no Be) ^⑦	75 g Pu	
Pu-239 (no Be) ^⑦	15 g Pu	
Pu-239Be ^⑦	15 g Pu	
Ir-192	200 Ci	200 Ci
Se-75	80 Ci	80 Ci

LTSS and Disposal Canister Payload Source Nuclides



MLSRT 435-B Cask Operations



Contact Us

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