

Transportation Container Development for Radiological Material

Managing Potential Risk Today

The Office of Radiological Security (ORS) works with industry, governments, and law enforcement to enhance global security by preventing high-activity radioactive materials from being used in an act of terrorism. One strategy ORS employs to achieve this mission is to remove and dispose of disused radioactive sources. The ORS Container Development Project works to ensure that adequate Type B containers are available to transport Category 1 and 2 sources.

Current Container Limitations

In a January 2004 rulemaking, the Nuclear Regulatory Commission (NRC) adopted revised regulations to harmonize with the 1996 transportation regulations of the International Atomic Energy Agency (IAEA). Upon adoption, the containers previously used for transport of Category 1 and 2 sources no longer meet the new regulatory requirements. This resulted in limited transportation options for older devices containing radioactive material.

Innovative Solution

ORS is working with partners to design and fabricate containers that can be used by industry, research, and government entities to ship radiological materials safely and securely. These Type B containers will meet new transportation regulations and are suitable for high activity beta/gamma devices. The two new Type B containers are described below:

- **435-B Unshielded Overpack (International/Domestic Use)**

An unshielded, leak tight container which can be used with the IAEA Mobile Hot Cell and Long Term Storage Shield (LTSS) to ship teletherapy and/or irradiator sources. This container can be used for international source recoveries as well as for domestic recoveries in urban areas where movement of oversize/overweight shipments is not allowed.

- **380-B Shielded Container (Domestic Use)**

ORS is working to complete the design and construction of a large shielded container capable of transporting a majority of the Off-Site Source Recovery Program (OSRP) high-activity, beta/gamma source backlog. This container will be used primarily for domestic recoveries.

Future Container Deployment

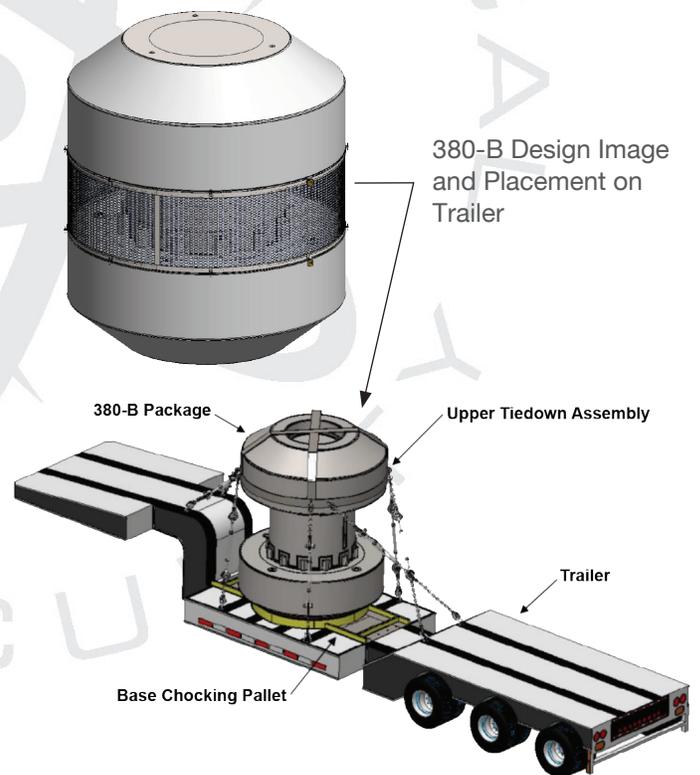
NNSA took delivery of two 435-B containers in mid-2017. The container will be deployed by ORS in the coming months following additional security enhancements. The 380-B Safety Analysis Report (SAR) is currently under review and ORS anticipates beginning fabrication in 2018 and deployment in 2019.

For more information, contact:
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435-B Container Test Unit (CTU)



Photo of a half-scale test unit after a free drop test.



ORS

Office of Radiological Security

Protect • Remove • Reduce

Global
Material
Security



NNSA
National Nuclear Security Administration

