



*U.S. Department of Energy
Savannah River Operations Site*

Transporting Depleted Uranium Oxide (DUO) from the Savannah River Site (SRS) to Nevada National Security Site (NNSS) for Disposition

BACKGROUND

Approximately 9,400 drums (both 85-gallon overpacks and 55-gallon drums) of DUO are being transported from SRS to Nevada for final disposal. This material, produced as a result of the production of nuclear materials, has been designated as low-level waste. The DUO meets the NNSS waste acceptance criteria and special analyses have been performed to ensure disposal at NNSS is protective. Therefore the DUO is being disposed of at NNSS.

CHARACTERISTICS OF DUO

SRS's DUO consists of Depleted Uranium trioxide (UO_3) (yellow oxide) which is a solid powder generally formed from thermal decomposition of uranyl-nitrate solutions. UO_3 absorbs water easily to form a stable hydrate that is very similar to the natural uranium minerals containing UO_3 .

Chemical analysis of the SRS UO_3 demonstrates a high level of purity, though corrosion products from process equipment is present (e.g., chromium from stainless steel corrosion and lead from natural uranium decay products). DUO is used in shielding for radiography cameras, coloring in porcelain and glass and trim weights in aircraft.



Sample of DUO

IDENTIFYING SHIPMENT CONTENTS

“Radioactive Class 7” placards will be placed on each shipment in accordance with the DOT regulations. The DUO averages 1500 lbs per drum with a average curie content of 0.284 Ci and will be shipped as low specific activity (LSA) Reportable Quantity.

SHIPMENT ROUTING

The shipments will be tarped, flat-bed trucks traveling via the highway using DOE approved transporters under the Motor Carrier Evaluation Program (MCEP). Typically trucks will carry 6 to 7 pallets to stay below weight limits. The drivers will be given a briefing on emergency response actions required of them in the event of an incident, or severe weather, and the importance of remaining on designated routes as well as the requirement to avoid prohibited





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areas of Clark County, NV. The shipments will comply with all fee and permit requirements. It is estimated that 400 trucks will be shipped over the next 9 months. There are at least two potential routes for the shipments and depend on the specific carrier and weather conditions. The route distance is estimated at 3,000 miles. The states that the shipments could travel through in route to NV from SC include GA, NC, TN, AL, MS, LA, TX, OK, NM, CO, KS, UT, and AR.



Pallet of 55-gallon drums un-bagged

EMERGENCY RESPONSE

In the unlikely event of an incident involving one of these shipments, State and local government agencies have the primary responsibility for response in the event of an accident. DOE Radiological Assistance Program teams are available and, if requested, can respond and provide on-scene support in approximately 4-6 hours. SRS will be ready to respond with a

team of technical experts if called upon to assist and coordinate recovery operations.

The drivers will be provided a copy of the Emergency Response Guide 162, along with the shipping papers. No other actions over and beyond the standards listed in ERG No. 162 are required. These are located in a pocket on the driver's door or within arm's length of the driver. SRS maintains a 24-hour emergency response telephone number (803-725-1911) through its Communications Center.

Communication Center personnel are trained in the communication and notification procedures in the unlikely event of a transportation incident.

INSPECTIONS

A safety inspection of the equipment will be performed upon arrival at the disposal site. After loading the trailers and prior to release of the shipment from the site, a radiological survey and inspection will be performed by SRS to ensure all safety and radiological requirements are met.



Bagged Pallet of 85-gallon drums

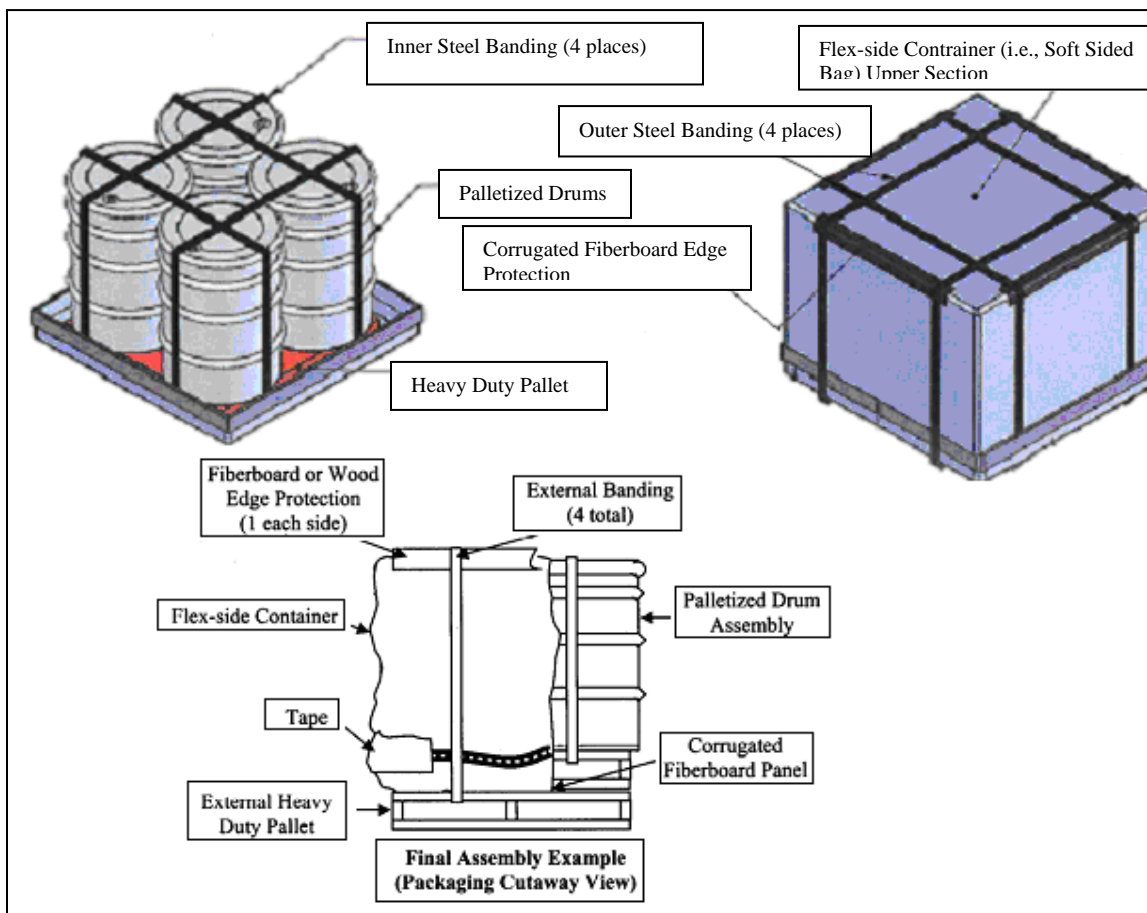




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PHYSICAL DESCRIPTION OF SHIPPING CONTAINERS

The DUO will be shipped in soft-sided bags which meet the DOT requirements for Industrial Packagings. The bags will contain palletized 55-gallon or 85-gallon drums and be arranged as shown below:



55-Gallon Shipping Bags require 4 edge protectors: one on top of each side
85-Gallon Shipping Bags require 8 edge protectors: one on top of each side and one on the bottom of each side.

Contacts:

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