

You are in : [Home](#) » [News Centre](#) » [News](#) » [Mobile Solution](#)

News Centre

[Top Stories](#)

[Feature Stories](#)

[In Focus](#)

[Press Releases](#)

[Media Advisories](#)

[Statements](#)

[IAEA Meetings](#)

[Multimedia](#)

[Transcripts](#)

Top Stories

Mobile Solution to Radioactive Sources Issue

Technology Helps Developing Countries Process Disused Radioactive Sources

Staff Report

10 June 2009

Developing countries now have the possibility of processing their own disused radioactive sources thanks to new technology conceived by the IAEA. Using a mobile hot cell, the technology was successfully employed for the first time in a real field operation in Sudan in early May to process high-activity disused radioactive sources. This was the first operation of its kind undertaken in a developing country.

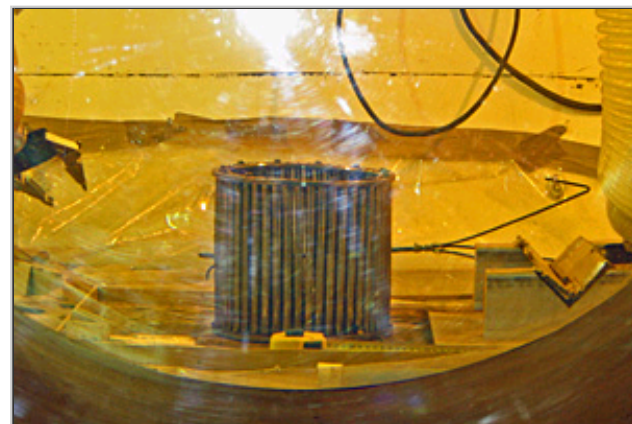
High-activity radioactive sources, used for diagnosing and treating medical patients, sterilizing blood and medical appliances or protecting stored crops, must be sustainably managed once they become disused. Until now, the processing of disused sources, or any other radioactive material, often required the use of highly-expensive, specialised facilities that are only available in developed countries. The mobile hot cell allows expert teams to conduct their work in countries that use high-activity radioactive sources for beneficial purposes but do not have the infrastructure to prepare them for safe and secure storage following the termination of their applications.

The project in Sudan was performed at the radioactive waste storage site of the country's Atomic Energy Commission. The inventory included disused sources that had been used in research and medical teletherapy machines containing high-activity Cobalt 60 sources. Inside the mobile hot cell, the radioactive sources were removed from the original equipment and transferred into a stronger storage container that was designed for their safe and secure storage.

The work was performed by the South African Nuclear Energy Corporation Ltd (Necsa), with support from the staff of the Sudan Atomic Energy Commission. The funding was provided by the IAEA Nuclear Security Fund.

"The success of this field operation is a big stride for the IAEA and its partners," says Jan-Marie Potier, Head of the Waste Technology Section in the Department of Nuclear Energy at the IAEA. "It signals great progress: the tool enables developing countries to take substantial steps within their countries to resolve legacy issues with disused sources."

The creation of the mobile hot cell and its successful operation illustrates an excellent example of technical cooperation between developing countries. It is an opportunity to extend disused source recovery and conditioning work to cover other developing countries.



Inside the mobile hot cell: radioactive source basket removed from an irradiator equipment. (Photo: IAEA)

Story Resources

- ["A Shared Solution for Risky Radioactive Sources", IAEA Bulletin \(Vol. 49/1, 2007\) \[pdf\]](#)
- [IAEA Waste Technology Section](#)
- [IAEA Nuclear Security Fund](#)
- [IAEA Nuclear Security Plan for 2006-2009](#)
- [IAEA Radiation, Transport & Waste Safety Division](#)

Other regions of the world have already expressed interest in designing and manufacturing such units and future operations using the current mobile hot cell are in preparation or planned in several countries under the IAEA Nuclear Security Plan.

Background

Already in 1997, through IAEA regional technical cooperation projects in Africa, successful conditioning operations for low-activity radioactive sources were carried out in a number of African countries. Drawing key lessons from these, the concept of a mobile hot cell for the conditioning of disused high-activity radioactive sources was conceived by the IAEA Waste Technology Section in 2003.

The first mobile hot cell was designed, manufactured and tested by Necsa in March 2007. Funds from the IAEA Nuclear Security Fund were made available to develop and manufacture the mobile unit. Additional support on the detailed designing of the mobile hot cell, developing the protocol for operations and establishing and training regional specialised teams from Necsa on recovering disused high-activity sources was provided by the IAEA.

A pilot operation in South Africa was observed by an international peer review team of experts from the UK, the USA, Belgium, Sudan and Tanzania. A peer review report concluded that the design was adequate to recover, handle and condition high-activity radioactive sources in countries that do not have facilities for such operations.

See Story Resources for more information.