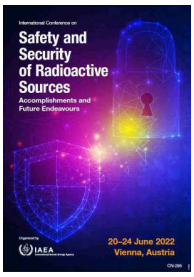


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# Zimbabwe experience in the management of disused sealed radioactive sources

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Sealed radioactive sources have been used in medical, research and industrial applications in Zimbabwe for socioeconomic development. The country has a return to supplier policy as a requirement for all import of sources. When they become disused, sources are stored at respective facilities pending return to manufacturer or repatriation where return to supplier is not possible. To date the country has over 200 disused sources stored within the licensed holders. Though these are still under regulatory control, most of the sources have continued to be temporarily stored at licensed holders. They could not be returned to supplier because they are either legacy sources that were imported before existence of the regulatory body, damaged sources, or high cost of sending them back. The sources are therefore left vulnerable to theft, loss, or inappropriate management.

Government set out to strengthen the management of disused sealed radioactive sources from facility to national level as set out by the IAEA Supplementary Guidance on the Management of Disused Sources and the Radiation Protection Act (Chapter 15:15) [1]. This paper outlines deliberate actions taken to improve the safety and security of disused sources and storage of sources that could not be sent back to supplier.

An interim facility to manage disused radioactive sources have been stored at facilities for long term was established with appropriate security. This consisted of 3 ISO containers, one for source recovery from devices, and another for encapsulation and conditioning of recovered sources and the third for final storage of the sources. The interim facility has managed to house up to 40 vulnerable disused sources.

To manage damaged and legacy sources Zimbabwe in collaboration with IAEA undertook a demonstration exercise as part of a conditioning operation. It resulted in the recovery of 66 sources and conditioning them according to international requirements. The sources have been encapsulated to produce Special Form Capsules and package them as Type A package that were stored in the interim radioactive waste management facility. The packaging met the IAEA safety standard on Regulations for the Safe Transport of Radioactive Material [2].

In the long term, the country is developing a national centralised radioactive waste management facility to recover, process and store radioactive waste and disused sealed radioactive sources for long term. This has been developed with IAEA expert support and using reference design for a centralized spent sealed sources facility [3] and funding from central government. The facility will receive radioactive waste from licensed holders to ensure their proper handling and storage prior to return to supplier or for long term. Capability to handle high activity sources has also been incorporated.

In conclusion the provisions for strengthening management of disused sealed radioactive sources in Zimbabwe allowed for the development of adequate infrastructure for receiving, recovery, processing, and storage of disused sources. The interim storage facility allowed for immediate arrangements for improving safety

and security of sources while the centralised radioactive waste management facility presents long term measures for management of radioactive waste and disused sources. The implementation of provisions in the supplementary guidance on the management of disused sources have been essential.

References
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## Country OR Intl. Organization

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