DISUSED SOURCES A THREAT TO NATIONAL SECURITY





WHY ARE DISUSED SOURCES A THREAT TO NATIONAL SECURITY?

Due to the increasing use of radioactive sources within the United States along with the lack of a comprehensive database and tracking system, it has become relatively easy to obtain sealed sources. The sources could be utilized individually or in aggregate in a radiological dispersion device (RDD or dirty bomb) or in a radiation exposure device (RED).



While society derives many benefits from the use of sealed sources, the current paradigm for the management of sealed sources does not fully reflect the reality of the post 9/11 threat environment. The magnitude of the disused source problem is large, as is the threat it poses to national security. The U.S. Environmental Protection Agency (EPA) has estimated that an RDD incident in a major metropolitan area could result in 39 million cubic feet and 10 billion gallons of radioactively contaminated waste requiring disposal.

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HOW TO ADDRESS ISSUES CONTRIBUTING TO DISUSED SOURCES PROBLEM?

- 1) Consider alternative technologies for higher activity sources.
- Improve education and awareness of the life-cycle costs of using sources.
- 3) Develop programs to increase reuse and recycling of sources in storage.
- 4) Impose time limits on storage of disused sources.
- 5) Place restrictions on large inventories held by manufacturers and suppliers.
- Modify licensing and inspection processes to encourage licensees to take advantage of disposal options.
- Encourage licensees to expand and increase funding for disposal of sources.
- 8) Update financial assurance requirements to reflect actual costs.
- Increase availability and reduce cost of Type-B shipping containers.
- 10) Enhance tracking of disused sources deemed to pose a security threat.
- 11) Begin planning for future transition of programs that provide unintended disincentives for disposal.
- 12) Develop more consistent policies restricting import of foreign sources.

A DISUSED SOURCE is any sealed source of radioactive material that is not currently being utilized and will never be utilized again for the original intended purpose.

There are approximately **2** MILLION sealed sources and tens of thousands of disused sources in the United States.

DISUSED SOURCES

WHAT CAN BE DONE?





MORE TYPE B

CONTAINERS

RECYCLE SEALED SOURCES

EXPAND NSTS



INCENTIVES

FOR DISPOSAL



The Disused Sources Working Group (DSWG) has developed 24 recommendations to be considered by States, Federal agencies and industry representatives in implementing individual contributions towards a timely and comprehensive solution.

The full report can be found on the LLW Forum website at www.llwforum.org.

RECOMMENDATIONS OF THE DSWG

Acquisition and Accumulation

- Promote the reuse of sources already in inventory and the use of alternate technologies.
- Potential buyers of sealed sources should be educated about the cost of storage, transportation and disposal.
- Federal research agencies should give preference to grant applicants using sources in inventory and require budgeting for life-cycle costs.

Enhanced Regulatory Controls

- The U.S. Nuclear Regulatory Commission (NRC) should develop robust financial assurance requirements for all licensees.
- The NRC and Agreement States should consider an annual fee for sources in possession.
- The NRC and Agreement States should incorporate procedures in their inspection programs to review length of, reason for, and location of storage.
- The NRC and Agreement States should establish a twoyear limit on the storage of disused sources and have authority to direct the disposition of disused sources.
- The NRC should address the national security threat by amending its regulations to require specific licenses for at least certain Category 3 sources.
- The NRC should expand the National Source Tracking System (NSTS) to track Category 3 sources.
- The NRC and Agreement States should require "date last used" in the NSTS.
- The NRC-Conference of Radiation Control Program Directors (CRCPD) program should be adequately funded to address orphaned/abandoned sources.
- The NRC and Agreement States should require manufacturers and suppliers to dispose of sources that cannot be recycled on an annual basis.
- The NRC should work with sited compacts to ensure the agency's actions do not create orphaned sources from foreign countries.

Timely Reuse, Recycle or Disposal

- The EPA should conduct a study to identify measures to promote the reuse and recycling of sources.
- ✤ A "source exchange" program should be created.
- The NRC and Agreement States should encourage licensees to take advantage of the Texas Compact disposal facility.
- The National Nuclear Security Administration (NNSA) should identify several foreign Type B shipping containers and certify them for use in the U.S.
- The NRC and Agreement States should develop a process to warn licensees at least 1 year prior to the container certificate expiration date.
- The NRC and the U.S. Department of Transportation (DOT) should work cooperatively to increase the availability of Type B containers.
- The U.S. Department of Energy (DOE) should contract a market study to determine the demand for Type B containers and whether there is sufficient profit potential for the private sector to produce them.
- Congress should continue to fund the NNSA activities for the collection of sources that do not meet waste acceptance criteria of commercial disposal facilities.
- The NNSA should consider shifting a portion of its resources for the Source Collection and Threat Reduction (SCATR) program and Off-Site Source Recovery Program (OSRP) to the creation of an outreach program to educate licensees on life-cycle obligations related to sealed sources.
- States with Class B and C disposal facilities should review their policies, waste acceptance criteria, and alternate approaches methodology in NRC's Branch Technical Position on Concentration Averaging and Encapsulation (CA BTP) to potentially allow disposal of higher activity sources.
- The Texas compact should continue to allow disposal of sealed sources from outside the compact.