

Preventing Nuclear Terrorism

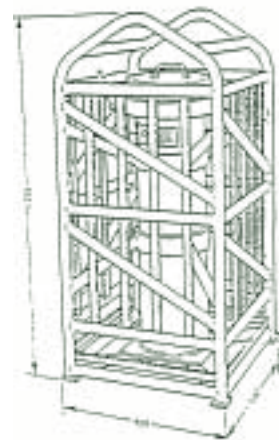
A Project of the Union of Concerned Scientists

If a terrorist group exploded just one nuclear weapon, hundreds of thousands of people could die. Because there is no effective protection against nuclear terrorism, the only solution is to prevent terrorists from obtaining nuclear weapons, and the fissile materials needed to make them, in the first place.

Problem: Efforts to Overturn U.S. Export Ban on Highly Enriched Uranium (HEU)

HEU is attractive to terrorist groups because it can be used directly to make a simple nuclear weapon. Since the inception of the Atoms for Peace program in the 1950s, the United States has exported HEU for civil applications abroad, both for use as a fuel for research reactors and as “targets” to produce isotopes used for cancer treatment and other medical purposes. More than a decade ago, Congress passed the Schumer amendment, a law that placed increased controls on U.S. civilian exports of HEU to encourage foreign users to switch to low-enriched uranium (LEU), which cannot be used directly to make nuclear weapons.

Today, when the threat of nuclear terrorism has never been greater, Congress should impose even tougher controls over U.S. weapons-usable nuclear materials to ensure their protection against theft. The energy bill that nearly passed last year, however, included legislation that would have loosened HEU export restrictions. It would have waived Schumer amendment restrictions on HEU exports for use in medical isotope production targets as long as the reactor itself did not also use HEU for fuel or the company had an agreement with the U.S. government to develop an alternative LEU fuel. Proponents of this approach argue that targets using LEU are not feasible; the existing law jeopardizes the continued supply of medical isotopes; and reactors that produce medical isotopes use only small amounts of HEU for targets. In each case, these arguments are incorrect or misleading.



Source: U.S. Department of Transportation.

Above: A type of container used in transporting HEU. HEU is vulnerable to theft during transportation as well as storage.

Solution: Strengthen, Don't Weaken, Export Laws

To protect weapons-usable nuclear materials against theft, Congress should:

- Reject any efforts to weaken HEU export controls. Even if the energy bill does not become law, supporters of weaker HEU controls will likely seek to attach their proposal to other legislation.
- Hold hearings on compliance with existing law. According to recent press reports, one U.S. HEU importer, MDS Nordion of Canada, is no longer pursuing conversion to LEU targets. Continued U.S. exports to companies that do not pursue LEU conversion are a potential violation of the Schumer amendment.
- Require an independent study on implementation of the Schumer amendment and availability of medical isotopes, to assure Congress and the public that sufficient quantities of these pharmaceuticals will still be available.
- Provide additional incentives for companies to convert to using both LEU reactor fuel and isotope targets; for instance, by giving preferential treatment (e.g., long-term isotope purchase contracts) to those companies that convert to LEU by a specified date.

More details:

The Schumer amendment to the Energy Policy Act of 1992 placed increased controls on U.S. HEU exports. Research reactors can use HEU for two distinct purposes: as fuel and as “targets” for isotope production. The amendment permits the export of HEU to foreign research and test reactors only if (1) no alternative, lower enrichment fuels or targets are available that can be used; (2) the recipient commits to switching to a lower enrichment fuel or target when one becomes available; and (3) the U.S. government is actively developing alternative fuels or targets that could be used.

This law has encouraged foreign countries that receive U.S. HEU for use in research reactors to reduce their dependence on this dangerous material and cooperate with the United States to develop alternatives that use LEU. This in turn has reduced the amount of U.S.-origin HEU outside of our borders, and has made it harder for terrorists to steal U.S.-origin HEU abroad and fabricate it into a crude but effective nuclear weapon that could be detonated back on U.S. soil.

The provision in the 2003 energy bill to weaken the Schumer amendment was designed to benefit a single foreign company—MDS Nordion of Canada—by allowing it to receive U.S. HEU indefinitely for medical isotope production. However, it would have much wider security implications. Since the provision would remove any incentive for Nordion to convert to LEU, smaller isotope producers in other countries that use HEU from non-U.S. sources would lose any incentive to convert to LEU themselves, and the global nuclear terrorist threat from HEU commerce would continue to grow.

Proponents of this special-interest provision claim the current law should be weakened for the following reasons:

CLAIM: LEU IS NOT A FEASIBLE ALTERNATIVE TO HEU FOR ISOTOPE PRODUCTION.

FACT: A number of countries, including Australia, already use LEU for isotope production. Others, including Argentina and Indonesia, are converting their production process from HEU to LEU as a result of the Schumer amendment. In fact, Nordion is now the only foreign recipient of U.S. HEU for isotope production, even though it could adapt its processing facility to process LEU targets. The most significant impact would be a 10 percent increase in the amount of radioactive waste produced—a small price to pay for the nonproliferation benefits of eliminating dependence on HEU.

CLAIM: WEAKENING CURRENT LAW IS NEEDED TO ENSURE THE CONTINUED SUPPLY OF MEDICAL ISOTOPES.

FACT: The supply of medical isotopes has not been adversely affected by the Schumer amendment, which only requires that foreign recipients of U.S. HEU for isotope production commit to using LEU targets when such targets become available. The United States has never denied an HEU export license under the Schumer amendment to any isotope producer that makes this commitment in good faith.

CLAIM: ONLY SMALL AMOUNTS OF HEU ARE USED IN REACTORS THAT PRODUCE MEDICAL ISOTOPES.

FACT: Canada has already stockpiled about 100 kilograms of U.S.-origin HEU—enough to make two simple Hiroshima-type bombs or at least four sophisticated bombs. Even after HEU is irradiated and processed to remove the desired isotope, the waste, which is retained in Canada, is still highly enriched and poses a significant proliferation and terrorism risk.

The Union of Concerned Scientists' Preventing Nuclear Terrorism Project seeks to prevent terrorists from acquiring nuclear weapons and the fissile materials—plutonium or highly enriched uranium (HEU)—needed to make them. This fact sheet series covers specific problems relating to nuclear terrorism and the steps the United States and other countries should take to address them.

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