

GTRI: Two Successful Years of Reducing Nuclear Threats

Significant Accomplishments from 2004 to 2006

On May 26, 2004, the National Nuclear Security Administration established the Global Threat Reduction Initiative. GTRI, as it is known, works to identify, secure, remove and/or facilitate the disposition of high risk vulnerable nuclear and radiological materials around the world, as quickly as possible, that pose a threat to the United States and the international community.

Since May 2004, GTRI has removed more than nine nuclear bombs worth of highly enriched uranium and secured more than 400 radiological sites around the world containing over 6 million curies, enough for approximately 6,000 dirty bombs.

Since its inception two years ago, GTRI has accelerated its nuclear security efforts and made significant progress to reduce the risk posed by vulnerable civilian nuclear and radiological materials, which could be used by terrorists to make an improvised nuclear device or a radiological dispersal device (dirty bomb).

GTRI's specific accomplishments to reduce the threat from both nuclear and radiological materials since May 2004 include:

Nuclear Material Threat Reduction

Accelerated conversion of research reactors from the use of highly enriched uranium to low enriched uranium

- Prior to the creation of GTRI, only two research reactors were converted during the four-year period from 2000 to 2004. The last U.S. research reactor was converted in 2000 and the last international research reactor was converted in 2004.
- By the end of calendar year 2006, six research reactors will be converted to operate with low enriched uranium (LEU) instead of using highly enriched uranium (HEU), which can be used to make a nuclear weapon.
 - In the past nine months, three research reactors have been converted to LEU. The three research reactors are:
 - The VR-1 Sparrow research reactor at the Czech Technical University in Prague. (This conversion in October 2005 was the first time a Russian-supplied research reactor was converted to LEU);
 - The HFR Petten reactor in the Netherlands converted in October 2005; and
 - The IRT critical assembly in Libya converted in January 2006.

- Over the next several months, three additional research reactors will be converted. Two U.S. university reactors at the University of Florida and Texas A&M will be converted in the fall of 2006. The Russian-supplied IRT-1 research reactor at the Tajoura facility in Libya will be converted by the end of October 2006.

Accelerated removal of Russian-origin HEU fresh and spent fuel

- In the two years prior to the creation of GTRI, only four shipments to remove Russian-origin research reactor fuel took place.
- Since May 2004, GTRI has significantly increased the number of shipments to return Russian-origin research reactor fuel. Ten shipments have successfully taken place to remove and return to Russia more than 132 kilograms of Russian-origin HEU since the creation of GTRI.
 - HEU Fresh Fuel: Six shipments to remove and return 69 kilograms of Russian-origin HEU fresh fuel have taken place since 2004. These shipments include the return of nuclear material to Russia from:
 - The Institute of Nuclear Physics in Uzbekistan in September 2004;
 - The Rez facility in the Czech Republic in December 2004;
 - The Salaspils facility in Latvia in May 2005; and
 - The Czech Technical University in the Czech Republic in September 2005.
 - The Tajoura research reactor in Libya in July 2006
 - The Maria research reactor in Poland in August 2006.
 - HEU Spent Fuel: Four shipments to remove and return 63 kilograms of Russian-origin HEU spent fuel from the Institute of Nuclear Physics in Uzbekistan took place from January to April 2006.
- As a result of the Bratislava Joint Statement on Nuclear Security Cooperation issued by Presidents Bush and Putin in February 2005, GTRI has developed an overall prioritized accelerated schedule of shipments:
 - By the end of 2006, all shipments to return eligible Russian-origin HEU fresh material will be completed; and
 - By the end of 2010, all shipments to return eligible Russian-origin HEU spent fuel currently stored outside of reactor cores will be completed.
- In accordance with this accelerated schedule, during the next six months, GTRI is planning to repatriate an **additional 300 kilograms** of Russian-origin HEU fresh fuel from facilities worldwide.

Removal of U.S.-origin research reactor spent fuel

- Since 2004, more than 81 kilograms of U.S.-origin HEU in spent research reactor nuclear fuel was returned to the United States from Germany, Austria, Greece, Japan, Argentina, the Netherlands and Sweden.

Removal of “Gap” Material

- Significant progress has been made to secure nuclear material that was not covered by other pre-existing nuclear material threat reduction programs. This material is referred to as “gap” material.
- More than 35 kilograms of U.S.-origin HEU fresh material was safely returned in two shipments from Canada and Belgium.
- In addition, in coordination with GTRI, and as a way to encourage collaboration with the private sector, AREVA recently signed contracts for the recovery of more than 85 kilograms of U.S.-origin HEU from several facilities within Europe.

Radiological Threat Reduction

- Physical protection upgrades have been completed in over 40 countries at more than 400 radiological sites, including industrial, medical, and commercial facilities. Since May 2004, GTRI secured 421 vulnerable radiological sites around the world containing over 6,000,000 curies - enough for approximately 6,000 dirty bombs.
- In the United States, since May 2004, GTRI removed 2,700 at-risk radiological sources totaling 74,350 curies - enough for more than 74 dirty bombs.
 - This work included recovering over 60,000 curies of Cobalt-60 from several U.S. university irradiators in December 2005, and removing 19 large gammators containing Cesium-137 from one hospital, six universities and five small colleges around the U.S. by October 2005.

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