



Fact Sheet

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GTRI: More Than Four Years of Reducing Nuclear Threats

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. GTRI works to reduce and protect vulnerable nuclear and radiological material located at civilian sites around the world.

Since May 2004 and through October 2008, GTRI has removed more than 40 nuclear bombs worth of highly enriched uranium and secured more than 750 radiological sites around the world containing over 20 million curies, enough for thousands of dirty bombs.

Since its inception, 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.
- Since May 2004, 18 research reactors have been converted to operate with low enriched uranium (LEU) instead of using highly enriched uranium (HEU), which can be used to make a nuclear weapon.
 - The 18 research reactors that have been converted to LEU are:
 - The HIFAR in Australia converted in October 2004;
 - 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 in Petten, the Netherlands converted in October 2005;
 - The IRT critical assembly in Libya converted in January 2006;
 - The 1-megawatt TRIGA reactor at Texas A&M University converted in late September 2006;
 - The University of Florida Training Reactor converted in late September 2006;
 - The Russian-supplied IRT-1 research reactor at the Tajoura facility in Libya converted in late October 2006;
 - The Chinese HFETR research reactor at the Leshan Nuclear Power Institute of China converted in March 2007;
 - The Chinese HFETR Critical Assembly at the Leshan Nuclear Power Institute

- converted in April 2007;
 - The Purdue University 1-kilowatt reactor (PUR-1) converted in September 2007;
 - The Dalat research reactor at the Nuclear Research Institute in Vietnam in September 2007;
 - The 1 Megawatt Portuguese research reactor (RPI) converted in September 2007
 - The VVR-SM reactor at the Institute of Nuclear Physics in Uzbekistan was converted in March 2008;
 - The SAFARI-1 reactor in Pelindaba, South Africa was converted in September 2008;
 - Argentina's RA-6 reactor in Bariloche was converted in September 2008;
 - The WWR-M reactor at the Kiev Institute of Nuclear Research in Ukraine was converted in September 2008;
 - Washington State University's research reactor at its Nuclear Radiation Center was converted in September 2008; and
 - The research reactor at Oregon State University was converted in September 2008.
- Five additional HEU research reactors were shut down: The ZLFR in Germany was shut down in May 2005 without converting; the FRJ-2 reactor in Germany was shut down in May 2006 without converting; the ULYSSE reactor in France was shut down in February 2007 without converting; the Chinese MNSR-SH at the Shanghai Testing and Research Institute was shut down in March 2007; and the ZPPR reactor at Idaho National Laboratories began decommissioning in September 2008.

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 had taken place.
- Since May 2004, GTRI has significantly increased the number of shipments to return Russian-origin research reactor fuel. Eighteen shipments have successfully taken place to remove and return to Russia more than 650 kilograms of Russian-origin HEU since the creation of GTRI.
 - HEU Fresh Fuel: Nine shipments to remove and return 350 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 Nuclear Research Institute Rez in the Czech Republic in December 2004;
 - The Salaspils facility in Latvia in May 2005;
 - 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;
 - The Rossendorf facility in former East Germany in December 2006;
 - The Maria research reactor in Poland in August 2007; and
 - The Dalat research reactor at the Nuclear Research Institute in Vietnam in September 2007.
 - HEU Spent Fuel: Eight shipments to remove and return 318 kilograms of Russian-origin HEU spent fuel have taken place since May 2004. These shipments consist of the return of:
 - Sixty-three kilograms in four shipments from the Institute of Nuclear Physics in Uzbekistan, which took place from January to April 2006;
 - Eighty kilograms from the Czech Republic in December 2007;
 - Fourteen kilograms from Latvia in May 2008;
 - Six and a half kilograms from Bulgaria in August 2008; and
 - Almost 155 kilograms from Hungary in October 2008.
- 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.

- - In accordance with this accelerated schedule, GTRI removed 268 kilograms of Russian-origin HEU fresh fuel from a former East German civilian nuclear facility at Rossendorf in December 2006. This was GTRI's single largest shipment ever and it was more material than had been removed under the entire program previously.

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

- Since 2004, more than 280 kilograms of U.S.-origin HEU in spent research reactor nuclear fuel was returned to the United States from Australia, Germany, Austria, Greece, Japan, Argentina, Sweden, Portugal, Romania and the Netherlands.

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 145 kilograms of U.S.-origin HEU fresh material was safely returned from Canada, Italy, Belgium and the Netherlands.

Radiological Threat Reduction

- Physical protection upgrades have been completed in over 40 countries at more than 755 radiological sites, including industrial, medical, and commercial facilities.
- Since May 2004, GTRI secured more than 755 vulnerable radiological sites around the world containing over 10,000,000 curies - enough for approximately 10,000 dirty bombs.
- In the United States since May 2004, GTRI removed over 8,000 at-risk radiological sources totaling 600,000 curies - enough for more than 900 dirty bombs. Over the life of the program, more than 18,650 radioactive sources have been secured from around the country.

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