

# Securing Nuclear & Radiological Material

## GTRI Moves Ahead

*Spencer Abraham, former US Secretary of Energy, reviews the global initiative.*

This past September, key partners of a global initiative to upgrade nuclear security met at an international conference in Vienna. Called “The Global Threat Reduction Initiative (GTRI) International Partners Conference,” the meeting launched a US-led initiative to remove and/or secure high-risk nuclear and radiological materials and equipment around the world that posed a threat to the global community. The initiative targets vulnerable nuclear and other radioactive material worldwide, building upon existing and long-standing threat reduction efforts.

The USA, the Russian Federation, and the IAEA are working together on several major programmes that are important components of the GTRI. They include the Russian Research Reactor Fuel Return Programme, the Reduced Enrichment for Research and Test Reactors Programme, and the Tripartite Initiative to secure high-risk radioactive sources.



Former US Secretary of Energy Spencer Abraham and Alexander Rumyantsev Minister of Atomic Energy of the Russian Federation, at a press conference during the GTRI meeting. (Austria Center, Vienna, Austria, September 19, 2004)

**N**uclear nonproliferation work will become much more important as we move into the 21<sup>st</sup> century. Our collective role in preventing the spread of dangerous nuclear materials, providing physical security over these materials, verifying the peaceful uses of nuclear energy, advancing science, and monitoring technology transfer — each of these functions will become more central to international security in the days and years ahead.

The United States of America is more firmly committed than ever to these ideals. We have taken significant steps to demonstrate the seriousness of our commitment, actions which have intensified and accelerated vital nonproliferation efforts.

- To reduce stockpiles and available quantities of nuclear materials, we have worked closely with Russia to irreversibly blend-down at least 500 metric tons of its surplus high enriched uranium (HEU). By the end of June, more than 216 metric tons had been eliminated.

We have accelerated our efforts to secure 600 metric tons of weapons-usable material in Russia. To date, we have upgraded security on over 43% of this material. By accel-

erating the speed at which we are doing this, we are now on track to finish securing Russia's weapons-usable material two years earlier than previously planned.

- We have accelerated our work with the Russian Navy to secure its fuel and nuclear warhead sites, and all these sites will be secured by the end of 2006. We also began a new program with Russia to upgrade security for its Strategic Rocket Forces sites. We soon will have secured two sites, and are working to secure the remaining 15 by the end of 2008.
- We have worked to further reduce quantities of weapons-usable HEU by converting research reactors in the United States and other nations to use low-enriched uranium (LEU), and we are working to eliminate 174 metric tons of HEU in the United States.
- We have worked proactively and cooperatively with Libya, the IAEA, and international partners to dismantle Libya's weapons of mass destruction infrastructure.
- We have coordinated with our counterparts in Moscow to return Russian-origin HEU fuel to Russia. In 2003, in cooperation with the IAEA and with Minatom, we removed

# IAEA Global Nuclear Security Initiatives

## United Nations

Security Council Resolution 1373 adopted in September 2001 obliges all UN Member States to take specific actions to combat terrorism. The Counter-Terrorism Committee (CTC) was established to monitor the performance in building a global capacity against terrorism. Twelve international conventions, including the Convention on the Physical Protection of Nuclear Material, are recognized as constituting the global infrastructure against terrorism. These provide the basis for the work of the CTC. The IAEA participates in the CTC and provides detailed reporting on the implementation of its nuclear security programme.

## The G8 & Nuclear Security

The G8 Global Partnership pledged to make \$20 billion available to the Russian Federation and the Newly Independent States over ten years to help manage their nuclear and other radioactive materials. As part of their contributions to the G8 Global Partnership, Canada, Germany and the UK have made contributions to the IAEA Nuclear Security Fund (NSF). At its Evian Summit in 2003, the G8 noted its contributions to the NSF and its cooperation with the Agency within the framework of the programme for protection against nuclear and radiological terrorism. The G8 reaffirmed its support for the actions undertaken by the Agency in favour of, inter alia, the security of radioactive sources, and declared its readiness to cooperate with the Agency.

The G8 stated that it would direct a working group to identify those elements of the Agency Code of Conduct that are of greatest relevance to prevent terrorists from gaining access to radioactive sources in close consultation with the Agency. The group would consider possible measures to safeguard and restrict access to sources; conditioning and/or recycling of sources; and systems to detect the passage of radioactive sources at strategic points such as border crossings.

## Nuclear Research Reactor

The security of research reactors and their associated facilities is of increasing international concern. Research reactors have features that raise specific nuclear security challenges. Some of these challenges, especially those concerned with sabotage, are addressed by measures that serve both safety and security objectives. In the context of the IAEA's comprehensive approach to addressing nuclear security issues, the IAEA has developed an integrated plan for enhancing the security of research reactors and their associated facilities.

The plan brings together the existing risk reduction work related to fuel and decommissioning, with measures to enhance physical security, engineering and safety measures to reduce vulnerabilities, material control, training to improve security awareness and culture, legislative and regulatory measures, and enhancement of emergency preparedness measures.

## European Union

In December 2003, the European Union adopted a 'Strategy Against the Proliferation of Weapons of Mass Destruction'. It incorporates a range of measures, including export controls; the criminalization of activities that contribute to the proliferation of WMD and related materials; physical protection of nuclear materials and facilities; and better control on the use, storage and disposal of radioactive sources. The Strategy implies closer collaboration between the EU and multilateral institutions, among them, the IAEA. As part of the Strategy, the EU has offered a contribution of 3.3 million Euro to the Agency to support its nuclear security programme.

The European Union/United States Declaration on the Non-Proliferation of Weapons of Mass Destruction, issued after the summit in Ireland in 2004, noted that the risk that terrorists might acquire weapons of mass destruction requires a long-term strategy and a multi-faceted solution involving the participation of international institutions, including those of the United Nations system. The Declaration expressed support for the IAEA's efforts to assist countries in developing effective and sustainable legal and regulatory controls on sources.

## Radiological Security Partnership

At the conference on the Security of Radioactive sources held in Vienna in March 2003, the US Secretary of Energy announced a new initiative, the Radiological Security Partnership (RSP) to address “the potential threats from under secured high-risk radioactive sources”. The RSP, in partnership with the IAEA, jointly engages with other countries to mitigate the risk posed by radiological materials that could be used as a radiological dispersal device (RDD).

The US Department of Energy (US DOE) and the Agency are in the process of establishing a Regional Radiological Security Partnership (RRSP) programme intended to complement the RSP, as well as on-going bilateral and IAEA radiological risk reduction activities. The RRSP will allow the IAEA and US DOE to work jointly with a regional partner to promote and support key issues and activities for radiological security in that region. Specific activities will be attuned to the particular needs and competences available amongst participating States. The RRSP will also offer the opportunity for other donors with particular regional interests or competences to join the Partnership.

## 2005 International Conference on Nuclear Security

Security experts, law enforcement authorities, and other officials meet in London 16-18 March, 2005 at the International Conference on Nuclear Security. Themed “Global Directions for the Future,” this conference will provide a forum for the international community to discuss the nature of the threat of malicious acts involving nuclear and other radioactive materials and their associated facilities. It will provide an opportunity to share information on how to most successfully combat sub-State and criminal threats now and in the future. For further information, visit the events calendar at the IAEA website at [www.iaea.org](http://www.iaea.org).

17 kilograms of Russian-origin fresh HEU from Bulgaria and returned it to Russia for safe storage.

- We also have returned to Russia approximately 14 kilograms of fresh Russian-origin HEU from Romania to be down-blended and used for civil nuclear purposes; 48 kilograms of Russian-origin HEU from a research reactor near Belgrade, Serbia; and 17 kilograms of Russian-origin HEU from Libya’s research reactor.

- Under the U.S.-origin spent fuel return program, we have returned 1,179 kilograms of HEU spent fuel to the United States for final disposition.

- And, working with the IAEA, Russia, and many other countries, we have developed a comprehensive international effort to improve the security and controls of high-risk radiological materials that could be used in a radiological dispersal device (RDD), or “dirty bomb.”

These efforts have been highly successful. They have made the world safer. Every instance in which we have worked to secure and remove dangerous materials has meant less opportunity for terrorists to acquire them. But as successful as such efforts have been, over the last several years it became apparent to us that we could — that we must — do even more.

Given the constantly evolving threat environment ... given the resolve of terrorists constantly thinking up new ways to do the unthinkable ... given the need to focus not just on rogue nations but on shadowy, stateless networks ... it is clear that we must find ways to further improve, further enhance, and further accelerate our non-proliferation work.

The Global Threat Reduction Initiative (GTRI) contains new measures to provide international support for countries’ national programs to identify, secure, remove and/or facilitate the disposition of vulnerable nuclear and other radiological materials and equipment around the world — *as quickly and expeditiously as possible* — that pose a threat to the international community. We are doing this because we are dedicated to securing dangerous, unsecured materials, and because we are equally dedicated to ensuring the continued peaceful use of nuclear power.

There are four elements that comprise this initiative.

- ① We will work in partnership to repatriate all Russian-origin fresh HEU fuel by the end of 2005. We will also work with Russia to accelerate and complete the repatriation of all Russian-origin spent fuel by 2010.

- ② We will likewise take all steps necessary to accelerate and complete the repatriation of all U.S.-origin research reactor spent fuel under our existing program from locations around the world within a decade. Our aim is to undertake these on

a priority basis, with priority given to cases involving the greatest security threats and situations in which diplomatic and cooperative opportunities present themselves.

③ We will work to convert the cores of targeted civilian research reactors that use HEU to use low enriched uranium fuel instead. We will do this not just in the United States, but also throughout the entire world. Indeed, let me stress that we are not urging nations to take up any work — whether securing materials or converting reactor cores — that we are not committed to doing at home in the United States.

④ The fourth and final leg of the GTRI is working to identify and secure other nuclear and radiological materials and related equipment not yet covered by existing threat reduction efforts. The first task we must undertake involves creating an official inventory of high-risk materials worldwide, which includes, but is not limited to, material located at enrichment plants, conversion facilities, reprocessing plants, research reactor sites, fuel fabrication plants, and temporary storage facilities. It also includes the kinds of materials that could be used in an RDD. This fourth element is absolutely critical to this concept of GTRI, because it is, arguably, the most challenging aspect. The challenge of this portion of GTRI lies in the fact it is so open-ended. It requires us to think creatively, to predict the unforeseen, and to stay several steps ahead of a determined and imaginative enemy. And it requires much greater international participation.

For our part, I am pleased to announce that the US Department of Energy will contribute \$3 million to the IAEA to help implement GTRI. This contribution will support important technical cooperation efforts under GTRI.

We are pleased that other Member States are committing resources to enhance security over nuclear and other radioactive materials. The Australian Government recently established a new program to secure radioactive sources in the Asia Pacific Region and committed approximately \$3.1 million to this effort. We welcome this important financial commitment by Australia and encourage other countries to make similar commitments to the extent possible.

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*Spencer Abraham was the United States' 10th and longest-serving Secretary of Energy. He resigned in November 2004. Abraham said acceleration of nuclear non-proliferation programs aimed at keeping nuclear materials away from terrorists "heads the list of important accomplishments" of the past four years. His article is based on his address to the GTRI Conference. For more information on conference, go to: [www.iaea.org/NewsCenter/News/2004/GTRI\\_conference.html](http://www.iaea.org/NewsCenter/News/2004/GTRI_conference.html).*

## Partners for Nuclear Security

### Protecting the Olympic Games

Imagine the potential for disaster. Greece has 22 medical clinics that use radioactive sources for cancer treatment and blood irradiation. These clinics are located in 18 hospitals in six major cities. In addition to these radioactive sources one large industrial-scale irradiator in an Athens suburb is using a large radioactive source array to get medical equipment sterilized.

Clearly, the Greeks needed tamper-proof security systems to preclude the possibility of a disaster during the Athens 2004 Summer Olympic Games. Thus, with funding from the US Department of Energy and technical assistance from the Sandia National Laboratories, the IAEA and the Greek Atomic Energy Commission initiated a major security upgrade to all 22 of Greece's medical facilities using radioactive sources. It is part of a far-reaching and comprehensive effort to ensure that nothing but sports would occur during the Athens Olympic ceremonies.

The comprehensive nuclear security action plan was designed to protect facilities and materials, to detect illicit trafficking and malicious use of radioactive materials, and to ensure that emergency response forces are effective and efficient.

Radiation detection equipment was installed at borders and other entry points into Greece, and mobile detection equipment deployed elsewhere. Hand-held radiation monitors were distributed amongst the thousands of security personnel and customs officials who were involved in the security for the Games. The equipment was deployed to detect radioactive materials that might be used as a weapon by terrorists in a radiological dispersal device, a so-called "dirty bomb".

The IAEA takes a lead role in providing international standards and guidance on both security and related safety issues. And it provides advisory services, training, technical assistance and information support. Since it was established, the IAEA nuclear security programme has provided assistance and support to dozens of States across the globe.