

## **IAEA ILLICIT TRAFFICKING DATABASE (ITDB)**

The IAEA Illicit Trafficking Database (ITDB) is unique. It contains information, which has been confirmed by the States involved, about incidents of illicit trafficking and other related unauthorized activities involving nuclear and other radioactive materials.

The ITDB was established in 1995 following the decision by the IAEA Board of Governors. It is a key contributor to the IAEA's activities to help strengthen nuclear security worldwide and prevent nuclear and radiological terrorism.

The Database's objective is to facilitate exchange of authoritative information on incidents of illicit trafficking and other related unauthorized activities involving nuclear and other radioactive materials among States. Over the years its purpose has expanded to maintaining and analyzing this information with a view to identifying common trends and patterns. The ITDB Secretariat produces Quarterly and Annual Reports containing statistics of the ITDB information and its assessment. The ITDB participating States are also provided with a CD-ROM version of the Database which is regularly updated.

In addition to State-confirmed information, the ITDB also collects information from open sources. Collection and evaluation of information from such sources makes an important contribution. It alerts the Agency to nuclear trafficking events not yet reported through official channels, it provides additional material for analysis, and provides a point of reference for alleged incidents. When the Secretariat obtains information from an open source, it seeks confirmation, or otherwise, from the Member State concerned.

Communication with participating Member States is maintained through the network of national Points of Contact (POC). Meetings of the POCs are organized regularly to review the Database operations.

There is an increasing demand for timely and complete information on illicit trafficking and other related unauthorized activities involving nuclear and other radioactive materials. The Agency through its interaction with Member States, is working to improve the completeness and comprehensiveness of the data reported to the ITDB and to upgrade its software to enhance analysis of data. A system for networking and enhanced analysis is being established among States and international organizations.

For the future, assistance will be provided to the POCs in improving national incident reporting procedures. Regional training workshops will be convened to increase the knowledge and responsiveness of POCs, to share results of analyses (e.g.. trends and patterns) and to encourage developing or upgrading their internal data management and reporting to the ITDB.

### **Scope of the ITDB**

The scope of the Database includes incidents, which involve *unauthorized acquisition, provision, possession, use, transfer or disposal of nuclear materials and other radioactive materials, whether intentional or unintentional and with or without crossing international borders, including unsuccessful and thwarted events.*" The cope of the ITDB also includes *other related unauthorized activities* involving nuclear and other radioactive materials. These include incidents involving inadvertent loss and discovery of such uncontrolled materials, e.g. 'orphan' sources.

## **ITDB statistical highlights as of 31 December 2004**

As of 31 December 2004, the ITDB contained 662 confirmed incidents reported by the participating Member States. On a number of occasions the Database has received notifications from non-participating Member States.

Of the 662 confirmed incidents, 196 incidents involved nuclear materials, 400 incidents involved other radioactive materials, mainly radioactive sources, 24 incidents involved both nuclear and other radioactive materials, and five incidents involved other materials. The majority of the confirmed incidents involved criminal activities, e.g. theft, illegal possession, smuggling, or attempted illegal sale of the materials.

In 2003-2004, the number of incidents reported by States to the ITDB substantially increased. Improved reporting may in part account for it. The majority of the incidents reported in 2003-2004 showed no evidence of criminal activity.

(link to Graph 1: [Incidents confirmed to the ITDB, 1993-2004](#))

### **Nuclear materials**

Illicit trafficking in *nuclear materials* is a potential threat to the security of states and international security. Nuclear trafficking could be a shortcut to nuclear proliferation and to nuclear terrorism. And loss or unauthorized disposal of nuclear material or nuclear waste may result in grave economic and environmental consequences.

The data reported to the ITDB in 1993-2004 shows a long-term downward trend in the occurrence of incidents involving nuclear materials. In 2004, however, for the first time since 2000, the ITDB recorded an increase in the number of such incidents. About half of them involved criminal activity. None involved HEU or Pu.

(link to Graph 2: [Incidents involving nuclear materials confirmed to the ITDB, 1993-2004](#))

During 1993-2004, eighteen confirmed incidents involved trafficking in high-enriched uranium (HEU) and plutonium (Pu). A few of these incidents involved seizures of kilogram quantities of weapons-usable nuclear material, but most involved very small quantities. In some of the cases the seized material was allegedly a sample of larger quantities available for illegal sale or at risk of theft. The most recent confirmed HEU case occurred in June 2003. Also, more than two dozens incidents involved trace amounts of <sup>239</sup>Pu in Pu sources.

(link to the Table: [Incidents involving HEU and Pu confirmed to the ITDB, 1993-2004](#))

The majority of confirmed cases with nuclear materials involved low-grade nuclear materials, i.e. low enriched uranium (LEU) mostly in the form of reactor fuel pellets, and natural uranium, depleted uranium, and thorium. While the quantities of these materials have been rather small to be significant for nuclear proliferation or use in a terrorist nuclear explosive device, these cases are indicative of gaps in the control and security of nuclear material and nuclear facilities.

The majority of confirmed incidents with nuclear materials recorded during the period 1993-2004 involved criminal activity, such as theft, illegal possession, illegal transfer or transaction. Some of these incidents indicate that there is a perceived demand for such materials on the 'black market.' Where information on motives is available, it indicates that profit seeking is the principal motive behind such events.

## Other radioactive materials

Illicit trafficking and other related unauthorized activities involving other radioactive materials, mainly *radioactive sources* is a global phenomenon. Radioactive sources are used worldwide in a host of legitimate applications while measures to protect and control their use, storage or disposal are much less strict than those applied toward nuclear materials.

During the period 1993-2004, a total of 424 incidents were reported involving other radioactive materials mostly in the form of radioactive sources. In the hands of terrorists or other criminals, some radioactive sources could be used for malicious purposes, e.g. in a radiological dispersal device (RDD) or ‘dirty bomb.’ Also, uncontrolled radioactive sources can harm human health or the environment. Unlawfully discarded or disposed of radioactive sources, when melted at scrap metal recycle plants, may lead to severe environmental and economic related consequences.

Incidents confirmed to the ITDB involved radioactive sources with various activity levels and applications. The majority of them involved radioisotope  $^{137}\text{Cs}$ , followed by  $^{241}\text{Am}$ ,  $^{90}\text{Sr}$ ,  $^{60}\text{Co}$  and  $^{192}\text{Ir}$ . Portable or mobile radioactive sources used for various industrial applications, such as gauging or radiography, are mostly frequently involved in confirmed incidents.

(link to the Graph 3: [Incidents involving radioactive sources confirmed to the ITDB, by type of radioisotope, 1993-2004](#))

(link to the Graph 4: [Incidents involving radioactive sources confirmed to the ITDB, by type of application, 1993-2004](#))

Activity levels of the majority of these sources were too low to pose serious radiological risk if used for malicious purposes. About 50 incidents involved high-risk ‘dangerous’<sup>1</sup> radioactive sources, which present considerable radiological danger if used in a malicious act. The overwhelming majority of incidents involving ‘dangerous’ sources were reported over the last six years.

Roughly a half of all incidents with radioactive sources involved criminal activity, most frequently theft. Perpetrator’ intentions are often not immediately apparent. Sources and devices in which they are used can be attractive for thieves because of their perceived high resale value or the value of their shielding or encapsulation metals. Some cases, however, indicate a perceived demand for radioactive materials on the ‘black market.’

## Radioactively contaminated materials

Some incidents involving radioactively contaminated materials also have been reported to the ITDB. Such incidents, however, are largely underreported.

## Joining the ITDB

Participation in the ITDB reporting is voluntary. As of September 2005, 81 IAEA Member States were participating in the ITDB programme.

(link to a fact sheet: [ITDB Membership as of 1 September 2005](#))

Non-participating Member States are strongly encouraged to join the ITDB programme. The Database seeks to achieve universality of its membership in order to better serve the purpose of effectively

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<sup>1</sup> IAEA *Categorization of Radioactive Sources*, TECDOC-1344. Radioactive sources belonging to Categories 1, 2 and 3 are considered ‘dangerous,’ i.e. as having potential to cause deterministic health effects if uncontrolled or used for malicious purposes.

contributing to the international efforts of strengthening nuclear security worldwide and preventing nuclear and radiological terrorism.

Member States wishing to join the ITDB programme should contact IAEA Office of Nuclear Security. Member States will be asked to nominate a single national Point of Contact who will provide reports on incidents to the ITDB, receive information and illicit trafficking reports produced by the Agency, and will be able to facilitate enquiries on specific incidents sent by the ITDB Secretariat. Information on the Database, the procedures for reporting incidents, and copies of the Incident Notification Form will be sent to the POC

**Membership applications and nominations of Points of Contact should be sent to:**

Ms. Anita Nilsson, Head, Office of Nuclear Security

International Atomic Energy Agency

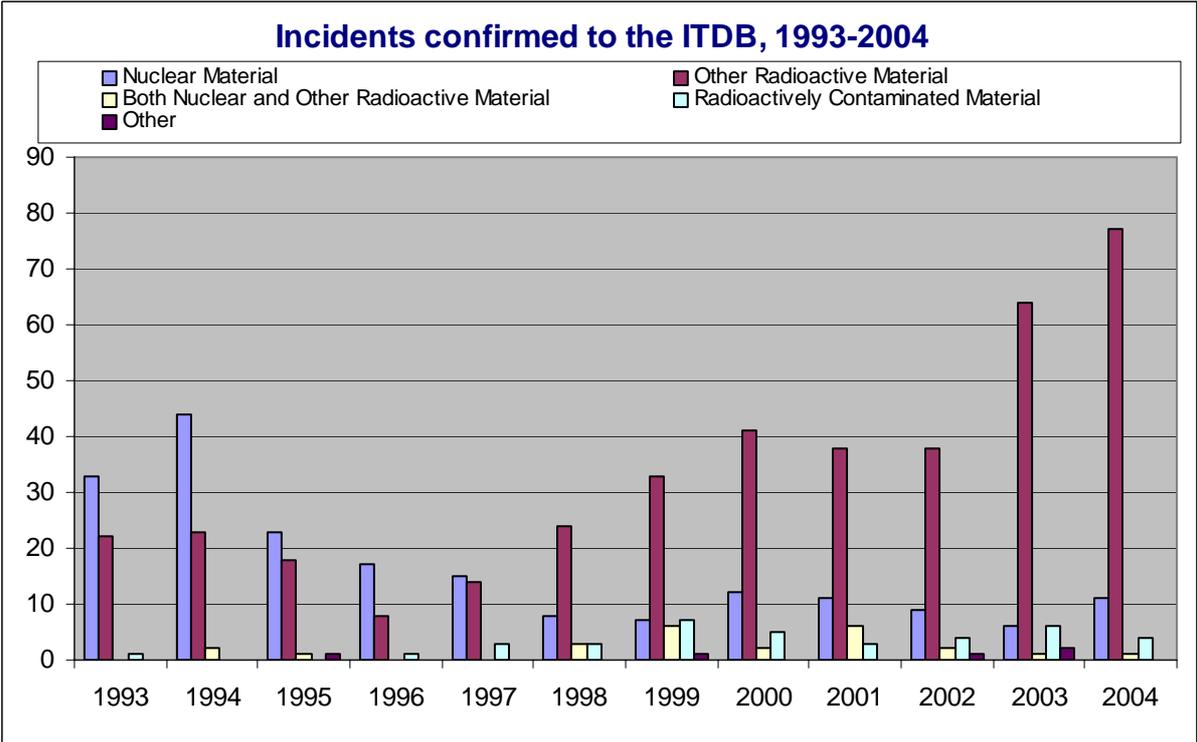
Wagramerstrasse 5, P.O. Box 100

A-1400, Vienna, AUSTRIA

Tel: +43-1-2600-22299

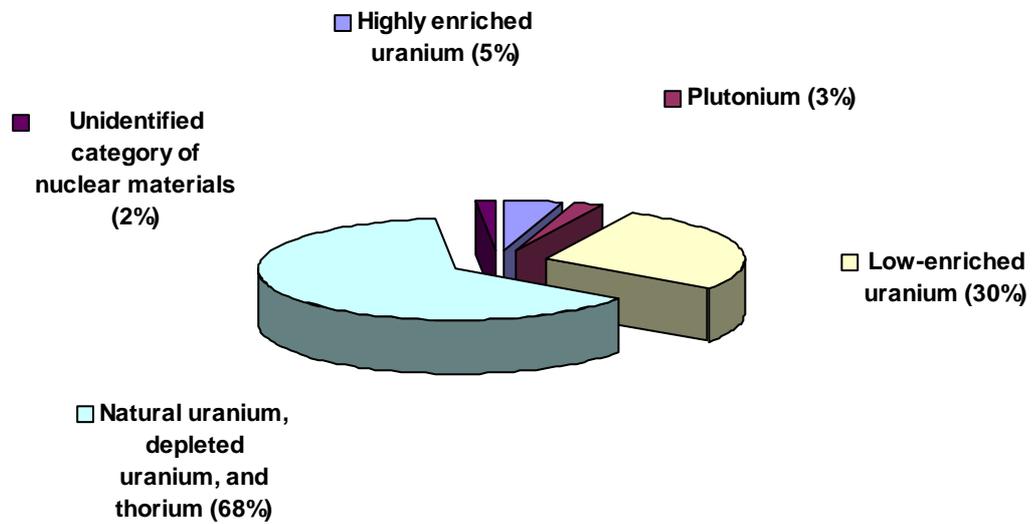
Fax: +43-1-2600-29299

E-Mail: [A.Nilsson@iaea.org](mailto:A.Nilsson@iaea.org)



Graph 1 Incidents confirmed to the ITDB 1993-2004

### Incidents involving nuclear materials confirmed to the ITDB, 1993-2004

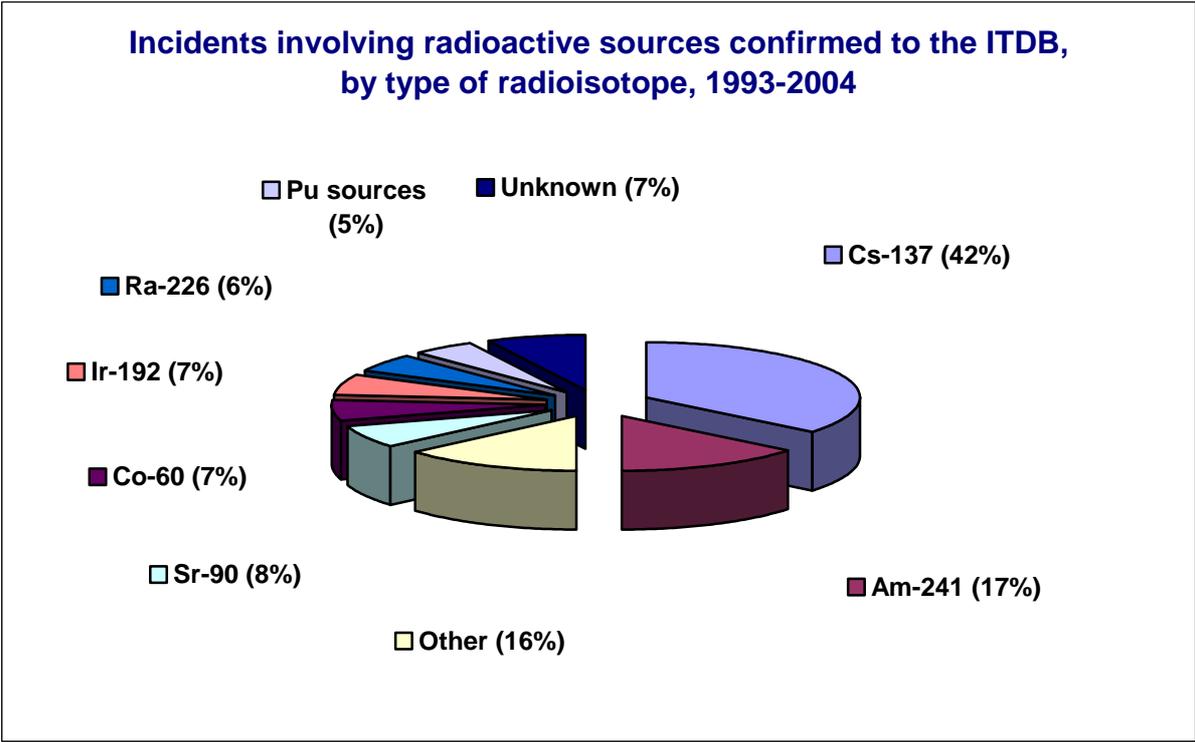


Note: The total is higher than 100% because some incidents involved more than one category of nuclear materials.

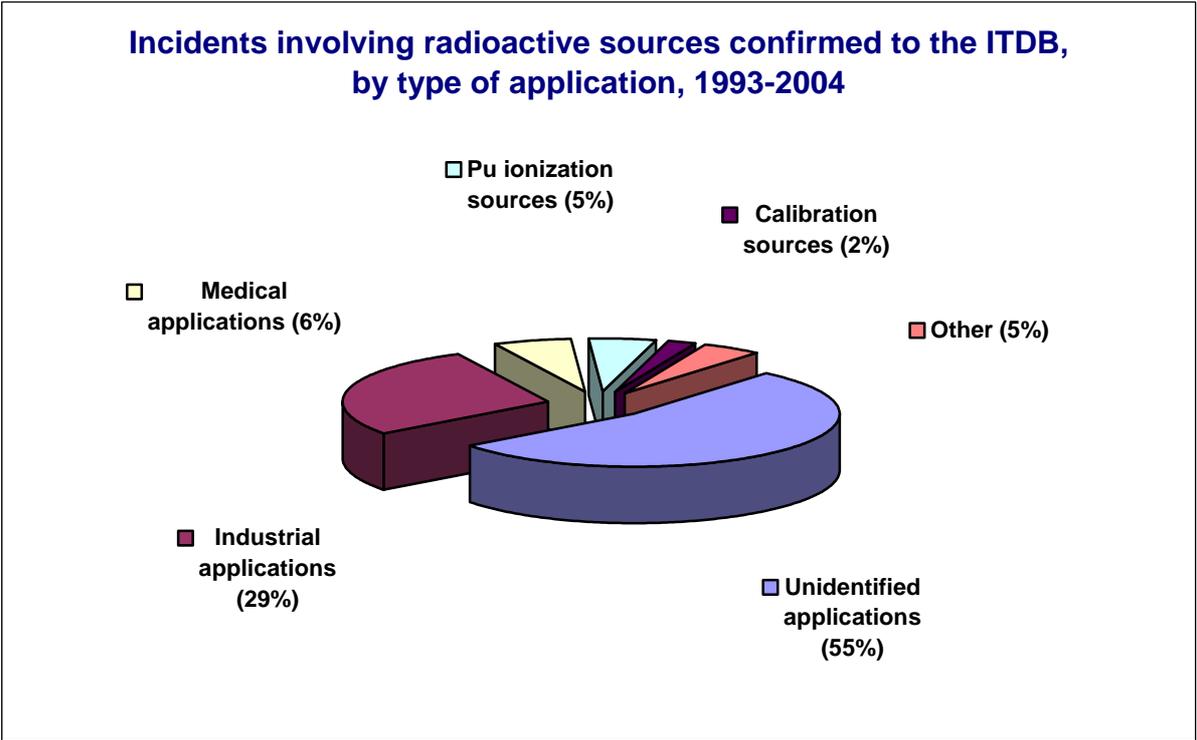
## Incidents involving HEU and Pu confirmed to the ITDB, 1993-2004

Date	Location	Material Involved	Incident Description
1993-05-24	Vilnius, Lithuania	HEU/ 150 g	4.4 t of beryllium including 140 kg contaminated with HEU were discovered in the storage area of a bank.
1994-03	St.Petersburg Russian Federation	HEU/ 2.972 kg	An individual was arrested in possession of HEU, which he had previously stolen from a nuclear facility. The material was intended for illegal sale.
1994-05-10	Tengen-Wiechs, Germany	Pu/ 6.2 g	Plutonium was detected in a building during a police search.
1994-06-13	Landshut, Germany	HEU/ 0.795 g	A group of individuals was arrested in illegal possession of HEU.
1994-07-25	Munich, Germany	Pu/ 0.24 g	A small sample of PuO <sub>2</sub> -UO <sub>2</sub> mixture was confiscated in an incident related to a larger seizure at Munich Airport on 1994-08-10.
1994-08-10	Munich Airport, Germany	Pu/ 363.4 g	PuO <sub>2</sub> -UO <sub>2</sub> mixture was seized at Munich airport.
1994-12-14	Prague, Czech Republic	HEU/ 2.73 kg	HEU was seized by police in Prague. The material was intended for illegal sale.
1995-06	Moscow, Russian Federation	HEU/ 1.7 kg	An individual was arrested in possession of HEU, which he had previously stolen from a nuclear facility. The material was intended for illegal sale.
1995-06-06	Prague, Czech Republic	HEU/ 0.415 g	An HEU sample was seized by police in Prague.
1995-06-08	Ceske Budejovice, Czech Republic	HEU/ 16.9 g	An HEU sample was seized by police in Ceske Budejovice.
1999-05-29	Rousse, Bulgaria	HEU/ 10 g	Customs officials arrested a man trying to smuggle HEU at the Rousse customs border check point.
1999-10-02	Kara-Balta, Kyrgyzstan	Pu	Two individuals were arrested trying to sell Pu.
2000-04-19	Batumi, Georgia	HEU/ 770 g	Four individuals were arrested in possession of HEU.
2000-09-16	Tbilisi Airport, Georgia	Pu/ 0.4 g	Nuclear material including Pu was seized by police in Tbilisi Airport.

2000-12	Karlsruhe, Germany	Pu/ 0.001 g	Mixed radioactive materials including a minute quantity of plutonium were stolen from the former pilot reprocessing plant.
2001-01-28	Asvestochori, Greece	Pu/ ~3 g	245 small metal plates containing Pu were found in a buried cache in the Kouri forest near the Asvestochori village.
2001-07-16	Paris, France	HEU/ 0.5 g	Three individuals trafficking in HEU were arrested in Paris. The perpetrators were seeking buyers for the material.
2003-06-26	Sadahlo, Georgia	HEU/ ~170 g	An individual was arrested in possession of HEU upon attempt to illegally transport the material across the border.



Note: The total is higher than 100% because some incidents involved more than one type of radioisotope.



Note: The total is higher than 100% because some incidents involved more than one source with different applications.