

Illicit Trafficking and Other Unauthorized Activities involving Nuclear and Radioactive Materials

Fact Sheet

About IAEA Illicit Trafficking Database (ITDB)

Since 1995, the Agency has been maintaining the Illicit Trafficking Database (ITDB). The ITDB is the Agency's information system on incidents of illicit trafficking and other unauthorized activities involving nuclear and other radioactive materials. It provides essential information support to the IAEA's nuclear security programme. The ITDB's principle objective is to facilitate the exchange of authoritative information on reported incidents among States. In addition, the collected information is analysed to identify common trends and patterns, assess threats, and evaluate weaknesses in material security and detection capabilities and practices.

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

Scope of the ITDB

The ITDB covers incidents involving unauthorized acquisition, provision, possession, use, transfer or disposal of nuclear and other radioactive materials, whether intentionally or unintentionally, with or without crossing international borders. It also covers unsuccessful or thwarted acts of the above type, the loss of materials and the discovery of uncontrolled materials.

Illicit Trafficking Database (ITDB) Statistics: 1993 - 2005

As of 31 December 2005, the ITDB contained 827 confirmed incidents reported by the participating Member States. On a number of occasions the Database has received notifications from non-participating Member States. The majority of these confirmed incidents involved intentional illegal acquisition, possession, transfer, or disposal of nuclear or other radioactive material. The database also includes incidents where actions may have been inadvertent, such as accidental disposal, or the detection or discovery of uncontrolled, or "orphan," materials.

Several hundred additional incidents that have been reported in open sources, but not yet confirmed, or otherwise, by States, are also tracked in the Database. These incidents are not included in the statistics.

Of the 827 confirmed incidents, 224 incidents involved nuclear materials, 516 incidents involved other radioactive materials, mainly radioactive sources, 26 incidents involved both nuclear and other radioactive materials, 50 incidents involved radioactively contaminated materials, and 11 incidents involved other materials.

[Link: View chart1: Incidents confirmed to the ITDB \(1993-2005\)](#)

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. Loss or unauthorized disposal of nuclear material or nuclear waste may result in grave economic and environmental consequences.

[Link: View chart2: Incidents involving nuclear materials confirmed to the ITDB \(1993-2005\)](#)

During 1993-2005, sixteen confirmed incidents involved trafficking in HEU and Pu. A few of these incidents involved seizures of kilogram quantities of weapons-usable nuclear material, but the majority involved very small quantities. In some of these cases, however, the seized material was a sample of larger quantities available for illegal sale or at risk of theft. These materials continue to pose a potential security threat. Two of the most recent HEU cases were reported in 2005. From the terrorism threat standpoint, these cases are of little concern but they show security vulnerabilities at facilities handling HEU.

[Link: View table: Incidents involving HEU and Pu confirmed to the ITDB \(1993-2005\)](#)

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 qualities and quantities of these materials have been rather insignificant 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 1993-2005 involved unauthorized possession and attempted sale. Some of these incidents indicate that there is a perceived demand for such materials on the illegal market. The majority of them have been supply-driven. Where information on motives is available, it indicates that profit seeking is the principal motive behind such events.

Other Radioactive Materials

During the period 1993-2005, a total of 542 incidents were reported involving other radioactive materials mostly in the form of radioactive sources. Illicit trafficking and other related unauthorized activities involving 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.

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}Cs , followed by ^{241}Am , ^{90}Sr , ^{60}Co and ^{192}Ir . Portable or mobile radioactive sources used for various industrial applications, such as gauging or radiography, are most frequently involved in confirmed incidents.

[Link: View chart3: Incidents involving radioactive sources confirmed to the ITDB, by type of radioisotope \(1993-2005\)](#)

[Link: View chart4: Incidents involving radioactive sources confirmed to the ITDB, by type of application \(1993-2005\)](#)

Activity levels of the majority of these sources were too low to pose serious radiological risk if used for malicious purposes. Just over 60 incidents involved high-risk "dangerous"¹ 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.

The majority of reported incidents with radioactive sources involved unauthorized disposal of source or their theft/loss. Industrial radioactive sources appear to be particularly vulnerable to theft when located inside transportation vehicles. Thieves' intentions are often not immediately apparent. Sources and devices in which they are used can be attractive 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 illegal 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 1 August 2006, 91 States were participating in the ITDB programme.

[Link: View Factsheet: ITDB Membership as of 1 August 2005](#)

Non-participating States are strongly encouraged to join the ITDB programme. States wishing to join the ITDB programme should contact IAEA Office of Nuclear Security. 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 and Nominations

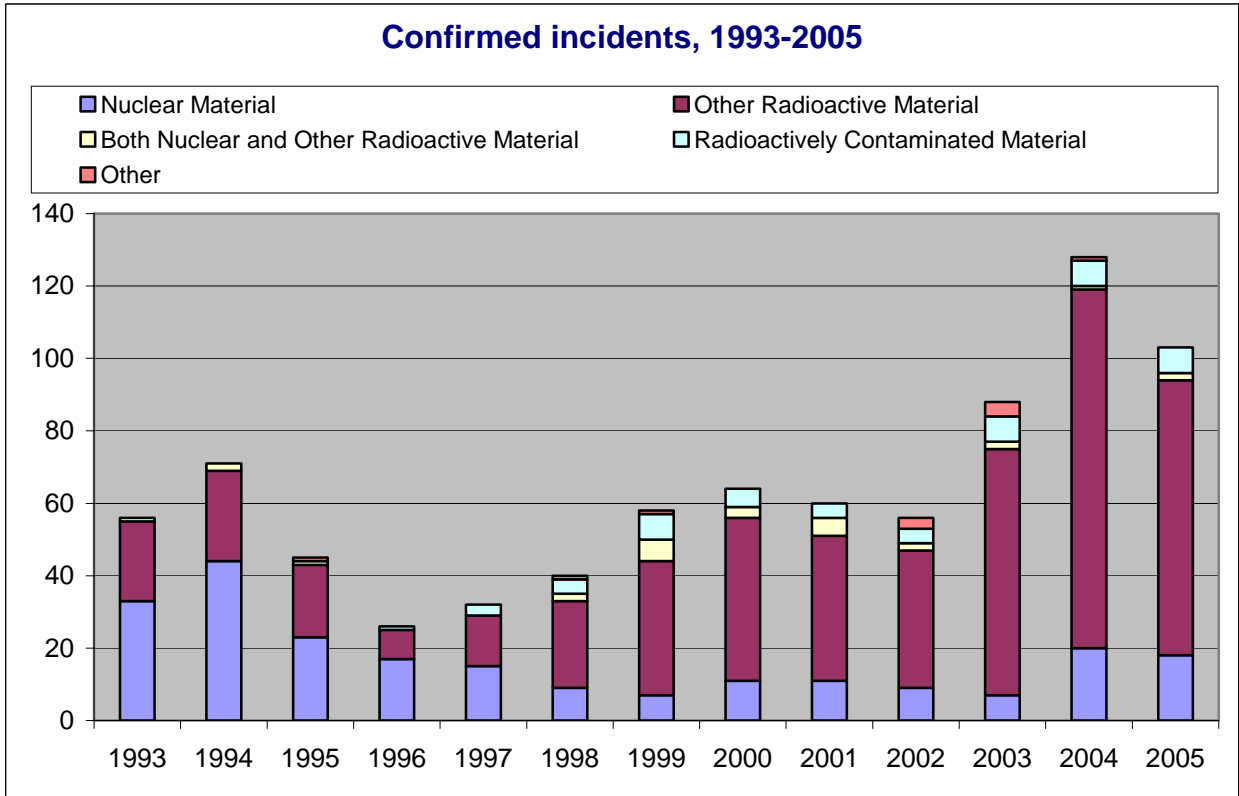
Membership applications and nominations of Points of Contact should be sent to:

Ms. Anita Nilsson
Head, Office of Nuclear Security
International Atomic Energy Agency
Wagramerstrasse 5, P.O. Box 100
A-1400, Vienna, AUSTRIA
Tel: +43-1-2600-22217
Fax: +43-1-2600-29250
E-Mail: A.Nilsson@iaea.org

¹ IAEA *Categorization of Radioactive Sources*, RS-G-1.9. 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.

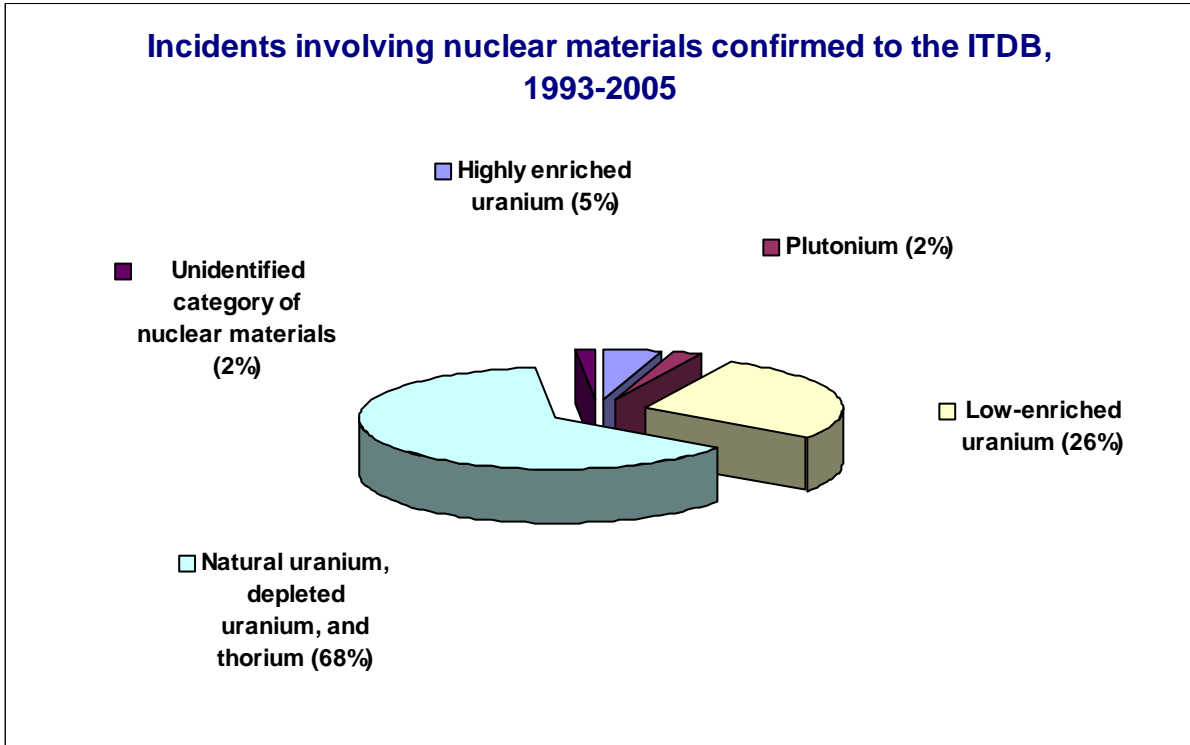
IAEA ILLICIT TRAFFICKING DATABASE (ITDB)

IAEA information system on illicit trafficking and other unauthorized activities involving nuclear and radioactive materials



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

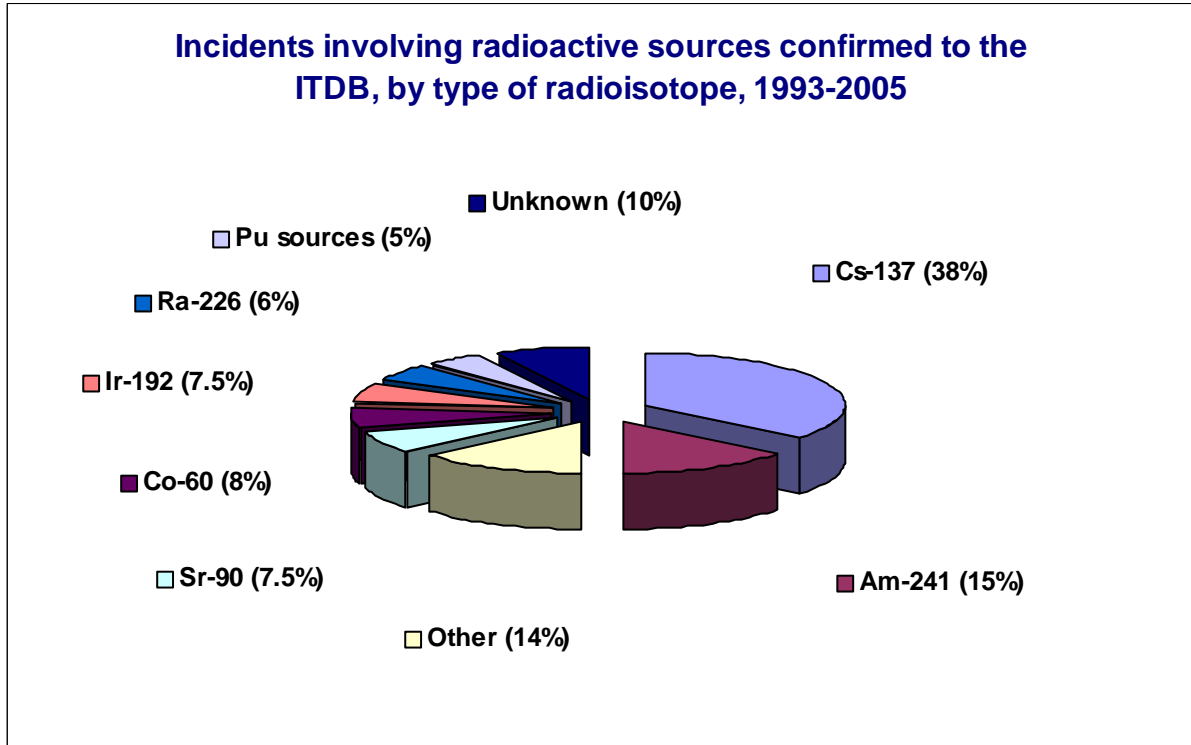
Incidents involving HEU and Pu confirmed to the ITDB, 1993-2005*

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 ₂ -UO ₂ 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 ₂ -UO ₂ 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.
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.
2001-07-16	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.
2005-03 to 2005-04	New Jersey, USA	HEU/ 3.3 g	A package containing 3.3 g of HEU was inadvertently disposed of.
2005-06-24	Fukui, Japan	HEU/ 0.0017 g	A neutron flux detector was reported lost at an NPP.

*Note: Incidents involving Pu in the form of radioactive sources are not included in this table. For this reason, some of the Pu cases included in the previous update have been removed. In addition, one HEU case has been removed due to updated information that further analysis of the material involved showed it was LEU.

IAEA ILLICIT TRAFFICKING DATABASE (ITDB)

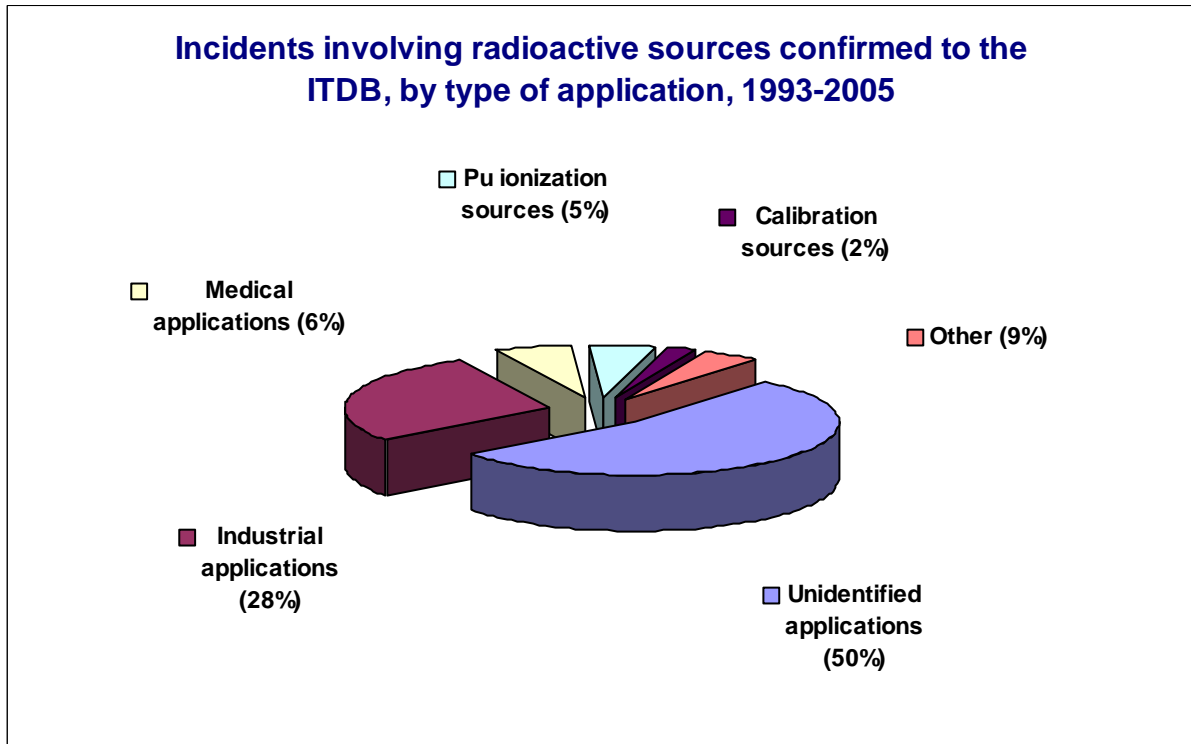
IAEA information system on illicit trafficking and other unauthorized activities involving nuclear and radioactive materials



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

IAEA ILLICIT TRAFFICKING DATABASE (ITDB)

IAEA information system on illicit trafficking and other unauthorized activities involving nuclear and radioactive materials



**States Participating in the ITDB programme,
As of 1 August 2006**

Algeria	Lebanon
Argentina	Lithuania
Armenia	Luxembourg
Australia	Madagascar
Austria	Malaysia
Azerbaijan	Mali
Bangladesh	Mauritius
Belarus	Mexico
Belgium	Montenegro
Bolivia	Morocco
Brazil	Namibia
Brunei Darussalam	Netherlands
Bulgaria	New Zealand
Canada	Niger
Central African Republic	Nigeria
Chile	Norway
Croatia	Pakistan
Colombia	Paraguay
Cuba	Peru
Cyprus	Philippines
Czech Republic	Poland
Denmark	Portugal
Dominican Republic	Romania
Ecuador	Russian Federation
Estonia	Saudi Arabia
Ethiopia	Serbia
Finland	Slovak Republic
France	Slovenia
Georgia	South Africa
Germany	Spain
Ghana	Sri Lanka
Greece	Sweden
Hungary	Switzerland
Iceland	Tajikistan
India	Tanzania
Indonesia	Tunisia
Iran	Turkey
Iraq	Ukraine
Ireland	United Kingdom
Israel	USA
Italy	Uruguay
Japan	Uzbekistan
Kazakhstan	Venezuela
Korea, Republic of	Vietnam
Kyrgyzstan	Zimbabwe
Latvia	