

IAEA Illicit Trafficking Database (ITDB)

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

Fact Sheet

About IAEA Illicit Trafficking Database (ITDB)

The IAEA Illicit Trafficking Database (ITDB) is a unique asset for participating States in combating illicit trafficking and other unauthorized activities involving nuclear and radioactive materials and also provides essential information support to the IAEA's nuclear security programme.

Established in 1995, the ITDB is more than just a database. It is the Agency's information system on incidents of illicit trafficking and other unauthorized activities involving nuclear and radioactive materials.

The ITDB's principle objective is to facilitate the exchange of authoritative information on reported incidents among States. The information collected from the States is subjected to ongoing analysis by the Agency's ITDB staff to identify common trends and patterns, to assess threats, and to evaluate weaknesses in material security and detection capabilities and practices.

Communication with participating States is maintained through the network of national Points of Contact (POC). The ITDB Office regularly delivers statistics and analyses of the reported information to participating States and partnering organizations in Quarterly and Annual Reports, and in ad-hoc reports upon request.

Regional illicit nuclear trafficking information workshops, regularly organized by the IAEA Office of Nuclear Security, aim to strengthen national, regional, and international capacities to prevent and combat illicit nuclear trafficking through enhanced information sharing, management, and coordination.

Scope of the ITDB information

The ITDB contains incidents reported by national Points of Contact or otherwise confirmed by States. Those incidents include unauthorized acquisition (e.g. through theft), provision, possession, use, transfer or disposal of nuclear and other radioactive materials, whether intentionally or unintentionally, with or without crossing international borders, as well as unsuccessful or thwarted acts of the above type. It includes, therefore, but is not limited to, incidents involving illegal trade and movement of materials across borders. It also covers the loss of materials and the discovery of uncontrolled materials.

The scope of the ITDB covers all types of nuclear materials (i.e. uranium, plutonium, thorium), all naturally occurring and artificially produced radioisotopes, and radioactively contaminated materials. No limitation is placed on the quantity of material, its activity level, or other technical characteristics. The ITDB also encourages States to report incidents involving non-radioactive materials in cases when such materials are being offered for sale and are purported to be nuclear or radioactive (scams).

Security and confidentiality of information

The ITDB incorporates strict information classification and dissemination guidelines. Information provided below represents a cross-section of the ITDB aggregate data that is available for public consumption.

Incidents reported in 2006¹

A total of 252 incidents were reported to the ITDB in 2006, of which 150 occurred in 2006 and the remaining 102 had taken place prior to that year, mainly in 2005.²

Unauthorized possession and related criminal activities

Of the 150 incidents that occurred in 2006, fourteen involved unauthorized possession and related criminal activities. Incidents included in this category can be described as “illicit trafficking.” They contain common “illicit trafficking” elements such as illegal possession, movement, or attempts to illegally trade in these materials.

The majority of these incidents involved sealed radioactive sources, such as ¹³⁷Cs, ⁶⁰Co, ²⁴¹Am, ⁹⁰Sr and a number of other radionuclides. Nuclear materials involved included natural uranium, depleted uranium, and thorium. In January 2007, Georgia reported to the ITDB an incident that occurred in February 2006 and involved the seizure of 79.5 g of 89%-enriched uranium.

Thefts and losses

Eighty-five incidents occurred in 2006 that involved thefts, losses, or misrouting of nuclear or other radioactive materials. Thefts of such materials are of particular concern because such thefts can be an upstream evidence of an illicit trafficking activity and are indicators of vulnerabilities in control and security systems. In about 73% of cases, the lost or stolen materials have not been reportedly recovered.

These incidents primarily involved sealed industrial radioactive sources such as ¹³⁷Cs, ²⁴¹Am, and ¹⁹²Ir and a number of other radionuclides, including those used in medicine, such as ¹²⁵I, ¹³¹I, ⁹⁹Mo, ^{99m}Tc, ¹⁰³Pd, etc. Eight of these incidents involved high-risk “dangerous” radioactive sources that are classified as Category 2 and 3, according to the IAEA Categorization of Radioactive Sources.³

Other unauthorized activities

Fifty-one reported incidents involved other unauthorized activities. Incidents included in this category primarily involved various types of material recovery showing no direct evidence of criminal behavior, such as recovery of sources, discovery of orphan sources, detection of materials disposed of in an unauthorized way, etc. Uncontrolled nuclear and other radioactive materials also are evidence of weaknesses in control and security measures. These could be exploited by those with a malicious intent.

¹ This is an update of the preliminary ITDB statistics published on 1 February 2007. The numbers slightly differ because of some additional reporting.

² A reader should note that the comparison of the ITDB 2005 data with the 2006 data should take into account the fact that a significant number of cases were reported in 2006, which had occurred in 2005, and therefore this number should be added to the numbers in the 2005 report.

³ 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.

The majority of these incidents involved the detection of radioactive sources and radioactively contaminated materials disposed of in an unauthorized way. In a significant number of reported incidents the detections occurred at national borders during international transport.

Overview of the ITDB information for 1993 - 2006

The following summarizes the information on incidents reported to the ITDB during 1993-2006.

As of 31 December 2006, the ITDB contained 1080 confirmed incidents reported by the participating States.⁴ On a number of occasions the Database has received notifications from non-participating Member States.

Of the 1080 confirmed incidents, 275 incidents involved unauthorized possession and related criminal activity, 332 incidents involved theft or loss of nuclear or other radioactive materials, 398 incidents involved other unauthorized activities, and in 75 incidents the reported information was not sufficient to determine the category of incident. Information reported to the ITDB shows a persistent problem with the illicit trafficking in nuclear and other radioactive materials, thefts, losses and other unauthorized activities.

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

Unauthorized possession and related criminal activities, 1993-2006

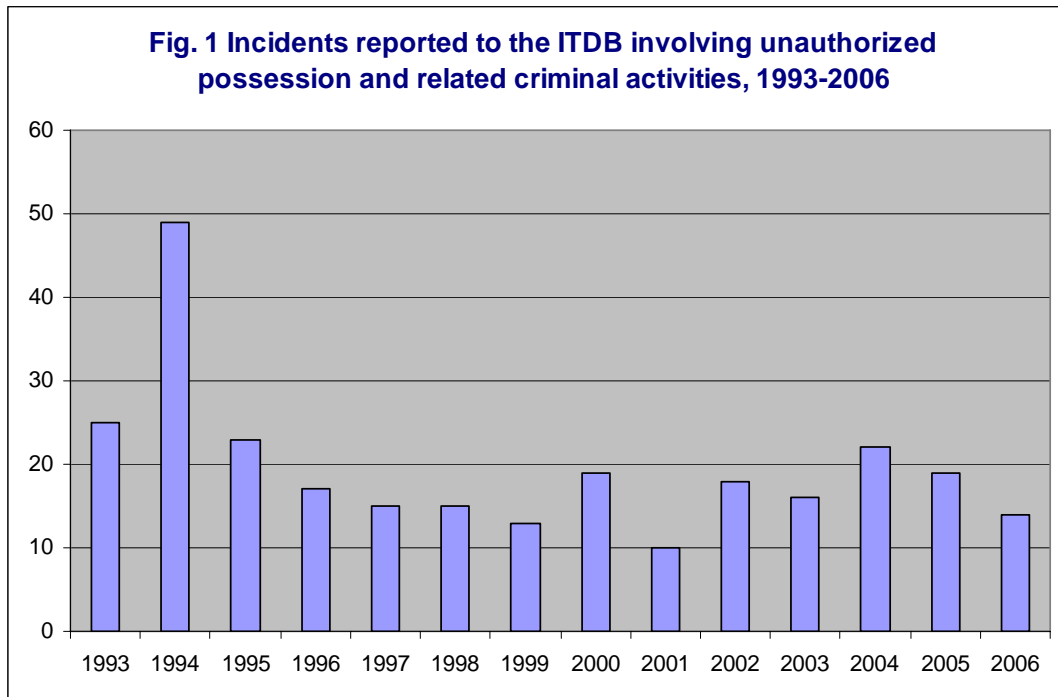
About 27% of the 275 incidents involving unauthorized possession and related criminal activities reported to the ITDB during 1993-2006 occurred in 1993-1994. After 1994, the number of reported cases per year dropped to a lower level. This has remained more or less stable over the years, averaging at about 16 incidents per year.

About 45% of incidents of unauthorized possession and related criminal activity involved radioactive sources, and 55% involved nuclear materials. Of the eighteen incidents involving HEU and Pu reported to the ITDB during 1993-2006 [[Table: Incidents involving HEU and Pu confirmed to the ITDB \(1993-2006\)](#)], fifteen involved unauthorized possession; some of these incidents involved attempts to sell these materials and their smuggling across national borders.

Past incidents of illicit trafficking in HEU and Pu involved seizures of kilogram quantities of weapons-usable nuclear material, but most have involved very small quantities. In some of these cases, there is a possibility that seized material was a sample of larger quantities available for illegal purchase or at risk of theft. If so, these materials pose a continuous potential security threat.

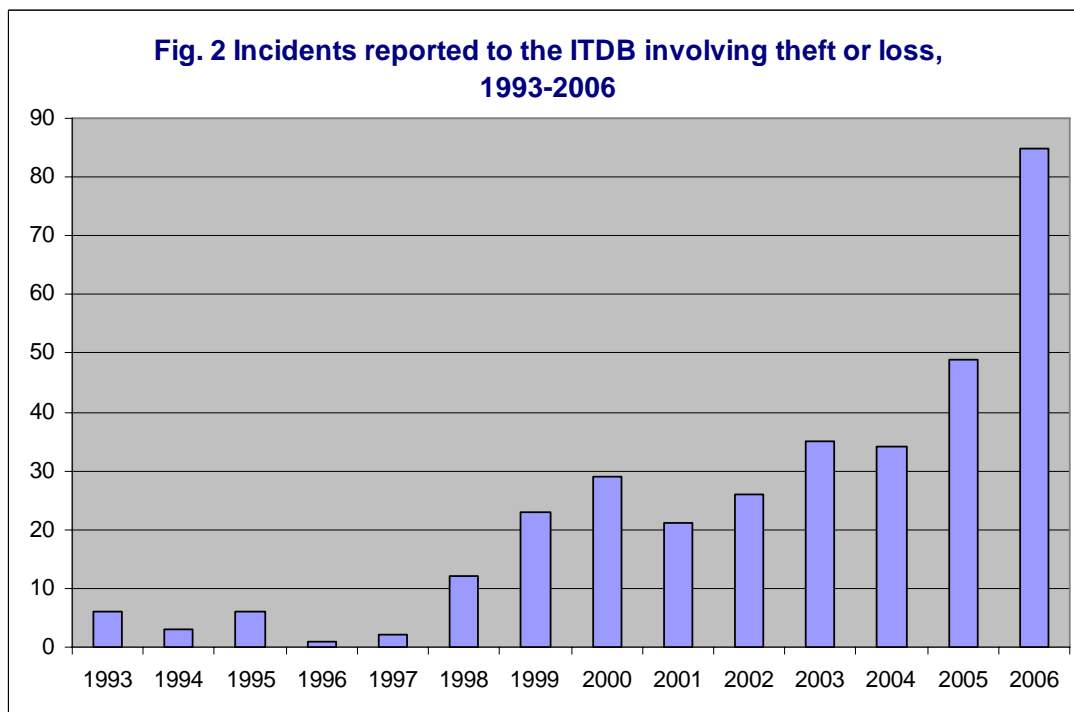
Incidents involving illicit trafficking in nuclear or other radioactive materials, especially those where materials are offered for sale, indicate that there is a perceived demand for such materials on the illegal market. The majority of these incidents have been supply-driven with no pre-identified buyer. Buyers and repeat offenders have been identified in some cases. Where information on motives is available, it indicates that profit seeking is the principal motive behind such events. Some cases, however, showed an indication of malicious intent.

⁴ This number includes one incident reported to the ITDB prior to 2006 which, due to additional information reported in 2006, was included in these statistics.



Thefts and losses, 1993-2006

The number of reported cases involving theft or loss increased significantly in 2006. This increase, however, reflects improvements in reporting procedures rather than an actual increase in reported incidents.



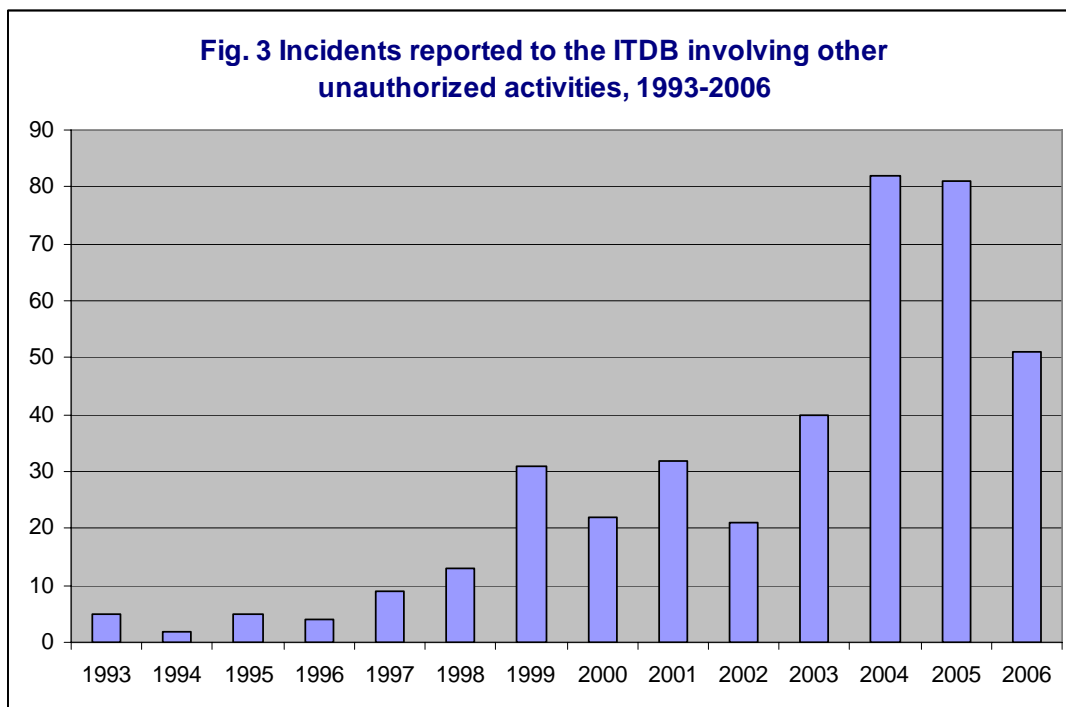
Reported thefts and losses have primarily involved radioactive sources, such as ^{137}Cs , ^{241}Am , ^{90}Sr , ^{60}Co , ^{192}Ir and other radioisotopes. The reported information shows that sources used in portable or mobile industrial equipment, such as gauges or radiography devices, are most vulnerable for theft or loss. They are particularly vulnerable during transportation by vehicle.

The reported information for the entire 1993-2006 period shows that in about 67% of the cases, the lost or stolen materials have not been recovered. These un-recovered materials include Category 2 and 3 high-risk 'dangerous' radioactive sources, which present considerable radiological danger if used in a malicious act.

Thieves' intentions are often not immediately apparent. Radioactive 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 for metal scrap dealers. Some cases, however, indicate a perceived demand for radioactive materials on the illegal market.

Other unauthorized activities, 1993-2006

Incidents involving other unauthorized activities have mainly involved radioactive sources, including some Category 1, 2 and 3 high-risk 'dangerous' sources, and radioactively contaminated materials. Occurrence of such incidents is an indication of failures in systems to control and dispose of radioactive materials. They also show weaknesses of regulatory systems.



Joining the ITDB

Participation in the ITDB reporting is voluntary. As of 1 August 2007, 96 States were participating in the ITDB programme.

[Factsheet: ITDB Membership as of 1 September 2007](#)

Non-participating States are strongly encouraged to join the ITDB programme. States wishing to join the ITDB programme should contact the 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: +43-1-2600-22299
Fax: +43-1-2600-29299
E-Mail: A.Nilsson@iaea.org