

NPT & Safeguards

The global **Nuclear Non-Proliferation Treaty (NPT)** makes it mandatory for all non-nuclear-weapon States to conclude comprehensive safeguards agreements with the IAEA.

Safeguards are activities by which IAEA inspectors can verify that a State is living up to its international commitments not to use nuclear programmes for nuclear-weapons purposes.

Today, the IAEA safeguards nuclear material and activities under agreements with more than 140 States.

Within the world's nuclear non-proliferation regime, the safeguards system functions as a confidence-building measure, an early warning mechanism, and the trigger that sets in motion other responses by the international community if and when the need arises.

Over the past decade, IAEA safeguards have been strengthened in key areas. In 1997, the Model Additional Protocol was developed to equip the system with better tools to provide assurance about both declared and possible undeclared nuclear activities.

Measures to strengthen safeguards aim to increase the likelihood of detecting a clandestine nuclear weapons programme and to build confidence that States are abiding by their international commitments.

What verification measures are used?

Safeguards are based on assessments of the correctness and completeness of a State's declared nuclear material and nuclear-related activities. Verification measures include on-site inspections, visits, and ongoing monitoring and evaluation. Basically, two sets of measures are carried out in accordance with the type of safeguards agreements in force with a State.

❶ One set relates to verifying State reports of declared nuclear material and activities. These measures—authorized under NPT-type comprehensive safeguards agreements—largely are based on nuclear material accountancy, complemented by containment and surveillance techniques, such as tamper-proof seals and cameras that the IAEA installs at facilities.

❷ Another set adds measures to strengthen the IAEA's inspection capabilities. The measures enable the IAEA not only to verify the non-diversion of declared nuclear mate-

rial but also to provide assurances as to the absence of undeclared nuclear material and activities in a State.

What kinds of inspections are done under comprehensive safeguards agreements?

❖ **Ad hoc inspections** typically are made to verify a State's initial report of nuclear material or reports on changes thereto, and to verify the nuclear material involved in international transfers.

❖ **Routine inspections** — the type most frequently used — may be carried out according to a defined schedule or they may be of an unannounced or short-notice character.

The Agency's right to carry out routine inspections under comprehensive safeguards agreements is limited to those locations within a nuclear facility, or other locations containing nuclear material, through which nuclear material is expected to flow (strategic points).

❖ **Special inspections** may be carried out in circumstances according to defined procedures. The IAEA may carry out such inspections if it considers that information made available by the State concerned, including explanations from the State and information obtained from routine inspections, is not adequate for the Agency to fulfil its responsibilities under the safeguards agreement.

❖ **Design information verification visits** may be made to facilities during the lifetime of facilities for verifying safeguards relevant design information. For example, such visits may be carried out during construction to determine the completeness of the declared design information; during routine facility operations and following maintenance, to confirm that no modification was made that would allow unreported activities to take place; and during a facility decommissioning, to confirm that sensitive equipment was rendered unusable.

Activities IAEA inspectors perform during and in connection with on-site inspections or visits at facilities may include auditing the facility's accounting and operating records and comparing these records with the State's accounting reports to the agency; verifying the nuclear material inventory and inventory changes; taking environmental samples; and applying containment and surveillance measures (e.g., seal application, installation of surveillance equipment).

What is the additional protocol to safeguards agreements?

The additional protocol is a legal document granting the IAEA complementary inspection authority to that provided in underlying safeguards agreements. A principle aim is to improve the IAEA inspectorate's ability to provide assurances about both declared and possible undeclared activities. Under the protocol, the IAEA is granted expanded rights of access to information and sites.

What strengthened safeguards measures are applied?

Strengthened safeguards measures may be applied under additional protocols and comprehensive safeguards agreements:

Measures under Comprehensive Safeguards Agreements

- ❖ IAEA collection of environmental samples in facilities and at locations where inspectors have access during inspections and design information verification (with sample analysis at the IAEA Clean Laboratory for safeguards and/or at certified laboratories in Member States).
- ❖ IAEA use of unattended and remote monitoring of movements of declared nuclear material in facilities and the transmission of authenticated and encrypted safeguards-relevant data to the Agency.
- ❖ IAEA expanded use of unannounced inspections within the scheduled routine inspection regime.
- ❖ IAEA enhanced evaluation of information from a State's declarations, IAEA verification activities and a wide range of open sources.
- ❖ State provision of design information on new facilities and on changes in existing facilities as soon as the State authorities decide to construct, authorize construction or modify a facility. The IAEA has the continuing right to verify the design information over the facility's lifecycle, including decommissioning.
- ❖ State voluntary reporting on imports and exports of nuclear material and exports of specified equipment and non-nuclear material. (Components of this reporting are incorporated in the Model Additional Protocol.)
- ❖ Closer cooperation between the IAEA and the State (and regional) systems for accounting for and control of nuclear material in Member States.

- ❖ Provision of enhanced training for IAEA inspectors and safeguards staff and for Member State personnel responsible for safeguards implementation.

Measures under Additional Protocols

- ❖ State provision of information about, and IAEA inspector access to, all parts of a State's nuclear fuel cycle - including uranium mines, fuel fabrication and enrichment plants, and nuclear waste sites—as well as to any other location where nuclear material is or may be present.
- ❖ State provision of information on, and IAEA short notice access to, all buildings on a nuclear site. (The Protocol provides for IAEA inspectors to have “complementary” access to assure the absence of undeclared nuclear material or to resolve questions or inconsistencies in the information a State has provided about its nuclear activities. Advance notice in most cases is at least 24 hours. The advance notice is shorter—at least two hours—for access to any place on a site that is sought in conjunction with design information verification or ad hoc or routine inspections at that site. The activities carried out during complementary access could include examination of records, visual observation, environmental sampling, utilization of radiation detection and measurement devices, and the application of seals and other identifying and tamper-indicating devices).
- ❖ IAEA collection of environmental samples at locations beyond declared locations when deemed necessary by the Agency. (Wider area environmental sampling would require IAEA Board approval of such sampling and consultations with the State concerned).
- ❖ IAEA right to make use of internationally established communications systems, including satellite systems and other forms of telecommunication.
- ❖ State acceptance of IAEA inspector designations and issuance of multiple entry visas (valid for at least one year) for inspectors.
- ❖ State provision of information about, and IAEA verification mechanisms for, its research and development activities related to its nuclear fuel cycle.
- ❖ State provision of information on the manufacture and export of sensitive nuclear-related technologies, and IAEA verification mechanisms for manufacturing and import locations in the State.

For more information about the NPT, see the UN website at www.un.org/events/npt2005

For information about IAEA safeguards, visit the Agency's website at www.iaea.org