



SCREENING CHAPTER 15 ENERGY

AGENDA ITEM: NUCLEAR ENERGY

Nuclear Safeguards

**Country Session: The Republic of TURKEY
14-15 June 2006**



CONTENT

- **International Agreements**
- **Legal basis of safeguards**
- **Nuclear facilities under safeguards**



INTERNATIONAL AGREEMENTS

- **Non-Proliferation Treaty of Nuclear Weapons**
(Official Gazette: 28 November 1979, no. 16823)
- **Safeguards Agreement with IAEA**
(Official Gazette: 20 October 1981, no. 17490)
- **Additional Protocol with IAEA**
(Official Gazette: 12 July 2001, no. 24460)



INTERNATIONAL AGREEMENTS (CONT'D)

Safeguards Agreement, INFCIRC/295

- INFCIRC/153 type Comprehensive Safeguards Agreement
- Requires that safeguards is applied to all source and special nuclear materials in all peaceful activities
- Requires establishment of SSAC (State System on Accounting for and Control of Nuclear Materials)



INTERNATIONAL AGREEMENTS (CONT'D)

Safeguards Agreement, INFCIRC/295

- SSAC was established at TAEK based on the IAEA “Guidelines for SSAC, IAEA/SG/INF/2” to meet Turkey’s obligations arising from the Safeguards Agreement.
- The objectives of SSAC:
 - to account and control of nuclear materials in the state;
 - to detect losses and unauthorized use or removal of nuclear materials;
 - to provide basis for the application of IAEA safeguards.



INTERNATIONAL AGREEMENTS (CONT'D)

Safeguards Agreement, INFCIRC/295

SSAC Information System

Information flow: Facility records → SSAC → IAEA

All information relevant to nuclear materials accounting data sent by facility operators (nuclear materials balance, movements between Material Balance Areas and from/to the country) are evaluated and verified by SSAC and submitted to the IAEA taking into account the requirements of the national legislation.



INTERNATIONAL AGREEMENTS (CONT'D)

Safeguards Agreement, INFCIRC/295

SSAC Accounting System

- Each user is required to establish an internal nuclear materials accounting and control system.
- Facility operators are required to keep accounting records and submit the reports to SSAC.
- Notification of planned inventory changes should be sent to SSAC within the periods stated in the By-Law.
- Physical and chemical transformations are subject to permission.



INTERNATIONAL AGREEMENTS (CONT'D)

Safeguards Agreement, INFCIRC/295

SSAC Measurements and Inspections

- SSAC also has a nuclear materials measurement and analysis system.
- SSAC carries out inspections to verify the records and reports of the facilities in accordance with the By-Law.



INTERNATIONAL AGREEMENTS (CONT'D)

Additional Protocol

- Initial full declaration required by IAEA within 180 days of accession to AP was submitted to IAEA in 2001
- Declarations are provided to the IAEA according to Article 2 and 3 every year.
 - Site description – Article 2a (iii)
 - U mines, U and Th concentration plants – Article 2a (v)
 - Source material – Article 2a (vi)
 - Exempted material – Article 2a (vii)
 - Intermediate and high-level waste with HEU, U-233 or Pu – Article 2a (viii)
 - Fuel cycle related research not involving nuclear material – Article 2a (i), 2b (i)
 - Sensitive nuclear fuel cycle related material and equipment – Articles 2a (iv), (ix)
 - 10-year plan – Article 2a (x)



LEGAL BASIS OF SAFEGUARDS

- **Turkish Atomic Energy Authority Law No. 2690**
(Official Gazette: 13 July 1982, no. 17753)
 - **Regulation on Issue of Licences for Nuclear Installations**
(Official Gazette: 19 December 1983, no. 18256)
 - **By-Law on Accounting for and Control of Nuclear Materials**
(Official Gazette: 10 September 1997, no. 23106)



LEGAL BASIS OF SAFEGUARDS (CONT'D)

Turkish Atomic Energy Authority Law No. 2690

Articles 4b, 4j and 8a authorizes TAEK to carry out activities connected with the fulfillment of Turkey's obligations arising from international treaties and agreements in the field of safeguards.



LEGAL BASIS OF SAFEGUARDS (CONT'D)

Regulation on Issue of Licences for Nuclear Installations

The regulation sets the rules to issue licences for nuclear installations and defines licensing procedures

Article 25: transportation of nuclear fuel to the reactor site is not allowed before documents pertaining to nuclear material accountancy and control program and physical protection plan of nuclear reactor facility have been presented to TAEK and approval is obtained.

Article 35: If it is established by TAEK that the facility does not meet the licence conditions,, that the special nuclear materials are not handled appropriately,the licence of the operating personnel or operating licence of the facility may be suspended or revoked.

Article 45: The applicant should submit a nuclear material accounting and control program as part of the application for an operating licence of a fuel cycle facility.



LEGAL BASIS OF SAFEGUARDS (CONT'D)

By-Law on Accounting for and Control of Nuclear Materials

- Based on the IAEA Safeguards Agreement.
- Establishes principles and methods related to accounting and control of nuclear materials to be complied with by persons responsible for facilities and individuals who use, keep, store, transfer, export and import nuclear materials.
- The main purpose is to prevent diversion of sources or special fissionable materials from peaceful nuclear activities to nuclear weapons, other nuclear explosives or any unauthorized use.



LEGAL BASIS OF SAFEGUARDS (CONT'D)

By-Law on Accounting for and Control of Nuclear Materials

Article 7: Facility Manager must notify TAEK before receiving, sending, importing or exporting any nuclear material. This requirement is also applicable to materials less than one effective kilogram.

Article 10: When the nuclear material is needed to be transformed physically or chemically, the facility manager is required to obtain permission from TAEK.

Article 11: Facility owner, who intends to use, store or transfer nuclear material, is required to establish an accounting and control system of nuclear materials, to assign a facility manager, to send facility design information to TAEK before the nuclear material arrives at the facility.

Article 17: Facility manager is required to keep records of accounting and operation of nuclear materials subject to accounting and control processes.

Article 21: Facility manager is required to send the accounting reports and special reports to TAEK.

Article 24: TAEK inspects the facilities to verify the records and reports.



NUCLEAR FACILITIES UNDER SAFEGUARDS

- **TR-2 Research Reactor:** 5 MW pool type, MTR type fuel elements with 20% enriched uranium
- **Triga Mark II Research Reactor:** 250 kW, solid homogeneous tank type, 20% enriched uranium-zirconium hydride fuel
- **Nuclear Fuel Pilot Plant:** Pilot plant for research and development in the experimental production of natural uranium dioxide ceramic pellets



Nuclear Safeguards

Thank You For Your Attention