

Presented by: Kim Gilligan

Safeguards Agreements

Kimberly Gilligan, PhD

Outline

- The Treaty on the Non-Proliferation of Nuclear Weapons
- Safeguards Agreements
- The Additional Protocol to Safeguards Agreements

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) 1970

- Preamble: Agreement on the prevention of wider dissemination of Nuclear Weapons (NW)
- NW States (NWS) not to transfer NW, nor to assist encourage NNWS to manufacture NW
- NNWS not to manufacture or acquire NW
- NNWS to accept Safeguards as set for an an agreement with the IAEA

The Treaty on the Non-Proliferation of Nuclear Weapons (Cont')

- Not to affect the “inalienable right” to develop, research and use Nuclear Energy for peaceful uses
- Pursue negotiations to cessation of arms race and nuclear disarmament
- “NWS” is one which has manufactured and exploded a NW before Jan 1, 1967

Safeguards Agreements

(SA, 1970)

- Based on “INFCIRC/153”
- “ ... an undertaking by the State to accept Safeguards on all source or special fissionable material in all peaceful nuclear activities ...”
- “... the State shall cooperate with the Agency”...
- “..the State shall establish a System of accounting and control” SSAC...
- “... *that the objective of Safeguards is the timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities ... and deterrence of such diversion by the risk of early detection*”.

Safeguards Agreements

- Nuclear material accountancy is a fundamental safeguards measure
- Containment and surveillance are important complementary measures
- Starting point of safeguards: *NM of a composition and purity suitable for fuel fabrication or for being isotopically enriched (No SG on ore or in mining)*
- At defined *Material Balance Areas* for accountancy purposes

Safeguards Agreements

- Design Information to be provided *180 days prior to start up before NM is introduced into a facility*
- Accounting and Operating Records at facility
- Reports provided by/through SSAC
- Scope, access and frequency of inspections

Safeguards Agreements

- Inspection activities:
 - Examination of records
 - Independent measurements of NM *subject to safeguards*
 - Verify function and calibrate instruments
 - Apply and use surveillance and containment measures

Safeguards Agreements

- Inspections at designated facilities/ Material Balance Areas
- Advance notice of at least one week (24 Hrs. for Pu/HEU 5% or more)
 - Possibility of unannounced inspections
- Statements on verification activities:
 - Results of inspections
 - Conclusion of inspections

Additional Protocol (AP, 1997)

- Provides additional legal authority
 - Information
 - Access
- Enhances non-proliferation by strengthening the effectiveness and improving the efficiency of safeguards
- Safeguards Agreement and the Additional Protocol to be read as a single document

Additional Protocol

- Information from Mines to Waste
- Information on scale of activities
 - Enrichment components, zirconium, graphite, reprocessing tanks, chopping machines, etc.
- Information on exports and imports
 - Reactors, reprocessing plants, gas centrifuges, diffusion, conversion, etc.
- Complementary Access to:
 - Any place in a site,
 - Mines & waste storages
 - Decommissioned facilities
- Managed access to sensitive places

CA Activities

- Visual observation
- Environmental sampling
- Radiation detection and measurement devices
- Examination of records
- Seals and other identifying and tamper-indicating devices

Statements

- Activities carried out
- Results of such activities
- Conclusions drawn

List of Activities

Annex I

Lists activities requiring description in AP declarations

List of Specified Equipment and Material

Annex II

Lists equipment and non-nuclear material for reporting of exports and imports

Comparison of SA vs. AP

INFCIRC/153

- **Precise declarations on nuclear material and facilities**
- **Inspections of nuclear material and verification of design information**
- **Quantitative verification**

Focused on the non-diversion of nuclear material from declared activities

INFCIRC/540

- **Descriptive declarations on other relevant materials and activities**
- **Complementary access to relevant locations**
- **Qualitative evaluation**

Improved capability to draw conclusion on the absence of undeclared nuclear material and activities in a State

• **END**