



**Bureau of International Security and
Nonproliferation**

International Requirements for Safeguards

2009 Fuel Cycle Information Exchange Program

**Rockville, MD
June 24, 2009**



IAEA Statute

Article III.A.5

- Agency assistance
- To bilateral or multilateral arrangements
 - *e.g. NPT, NWFZ treaties, Argentina/Brazil Declaration*
- To any nuclear activities of a State, at its request

Article XII

- Safeguards measures
 - On site inspection
 - Any time, any place access
 - Reports and record keeping by State
- Non-compliance



IAEA Safeguards

- Membership in IAEA does *not require* acceptance of safeguards
- IAEA safeguards possible in non-Member States
 - DPRK
 - Taiwan, China
- Implementation of safeguards *requires* consent of the State (not self-executing)
 - Safeguards Agreement
 - Security Council Chapter VII action (e.g. Iraq)
 - Voluntary undertaking (e.g. South Africa; Libya)



Types of Safeguards Agreements

Item Specific - INFCIRC/66/Rev.2

India, Israel and Pakistan

- Earliest safeguards agreements
- Suspended while NPT safeguards agreement in force

Comprehensive Safeguards Agreements (CSAs) - INFCIRC/153 (Corr.)

NPT non-nuclear-weapon States (NNWSs)

Voluntary Offer Agreements (VOAs)

China, France Russia, UK and US (NPT NWSs)



Nuclear Nonproliferation Treaty

Non-Nuclear-Weapon States (NNWSs)

- Not to acquire nuclear weapons or other nuclear explosive devices (Art. II)
- Accept Agency safeguards on all nuclear material in the State (Art. III.1)
- Conclude CSA within 18 months (Art. III.4)

All States Parties

- Not to transfer nuclear material and EDP equipment and material to NNWSs except subject to Agency safeguards (Art. III.2)



Comprehensive Safeguards Agreements

Non-Nuclear-Weapon States (NNWSs)

- Not to acquire nuclear weapons or other nuclear explosive devices (Art. II)
- Accept Agency safeguards on all nuclear material in the State (Art. III.1)
- Conclude CSA within 18 months (Art. III.4)

All States Parties

- Not to transfer nuclear material and EDP equipment and material to NNWSs except subject to Agency safeguards (Art. III.2)



CSAs: State Undertaking

to accept safeguards, in accordance with the terms of the Agreement, on all source or special fissionable material in all peaceful nuclear activities within the territory of the State, under its jurisdiction or carried out under its control anywhere ...

INFCIRC/153, para. 1



Scope and Starting Point of Safeguards

Scope:

- “Nuclear material means source and special fissionable material as defined in Art. XX of the Statute – para 112
- “Source material” does not include ore or ore residue - para. 112

“Starting Point” of Safeguards – Uranium Conversion Facility

- SG do *not* apply to material in mining or ore processing - para. 33
- Certain SG measures apply with respect to “pre-34(c) material” (reporting exports/imports) - para. 34(a) and (b)
- “The *other SG procedures* specified in the Agreement” apply to 34(c) material



CSAs - Elements

Information:

- Initial report on all 34(c) nuclear material
- Initial list of all nuclear facilities, facility design information
- Record keeping for nuclear activities
- Reporting of inventory changes (flow), including imports and exports



CSAs - Elements

Access:

- **Design Information Verification (DIV) - verification of facility design information**
- **Other Inspections:**
 - Ad hoc – used for verifying initial report and changes till Sub. Arr. in force; exports
 - Routine – once Subsidiary Arrangements agreed; access limited to strategic points
 - Special – when information available to IAEA “not adequate for Agency to fulfill its responsibilities under the Agreement”



Detection of Diversion

Objective of SG under INFCIRC 153: timely detection of diversion of significant quantities of nuclear material ... to “the manufacture of nuclear weapons or of other nuclear explosive devices or for purposes unknown”, and deterrence of such diversion by the risk of early detection

Diversion can be achieved through:

- **Use of *declared* nuclear material or facilities for proscribed purposes**
- **Use of *undeclared* nuclear material for proscribed purposes**



Response

- If Agency is unable to verify that there has been no diversion of nuclear material, may report to Security Council and/or take other action
(INFCIRC/153, para. 19)
- If Board decides an action by the State is “essential and urgent” to ensure verification of non-diversion, State is obliged to take that action
(INFCIRC/153, para. 18)

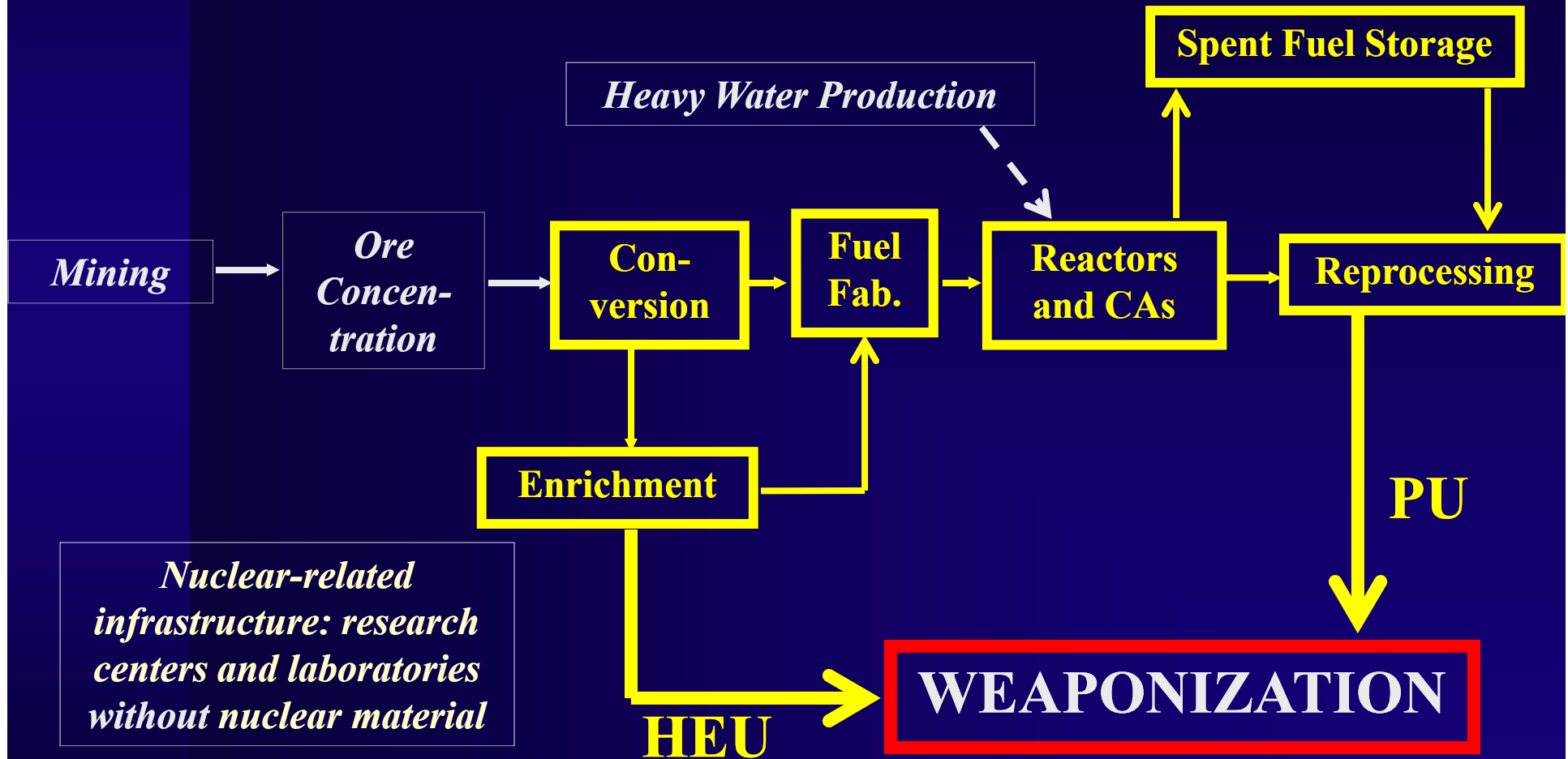


Safeguards Agreements based on INFCIRC/153

- **CSAs with NNWSs pursuant to the NPT**
- **CSAs with NNWSs pursuant to NWFZ Treaties**
 - **Tlatelolco – Latin America & Caribbean (negotiated 1967)**
 - **Rarotonga- South Pacific (entered into force 12/1986)**
 - **Bangkok- South-East Asia (entered into force 3/1997)**
 - **Pelindaba- Africa (negotiated 1996)**
- **Sui generis CSAs with NNWSs (e.g. Argentina/Brazil)**
- **VOAs with the 5 NPT NWSs; different in scope and undertaking, but patterned after INFCIRC/153**



Safeguards Coverage under CSAs





Small Quantities Protocol (SQP) - 1974

- **State eligibility for SQP (GOV/INF/276, Annex B):**
 - Little or no nuclear material *and*
 - No nuclear material in a nuclear facility
- **Holds in abeyance much of State's reporting and access requirements**
- **Does not hold in abeyance:**
 - Obligation not to divert nuclear material to proscribed uses
 - Requirement to establish SSAC
 - Report annually imports and exports of nuclear material



Limitations of Traditional Safeguards

- Limited routine *access* – frequency and locations
- Focus was on declared materials (*correctness*)
- No assurances of absence of undeclared nuclear material and facilities (*completeness*)



Chronology of Events

IRAQ

4/91 7/91



1990

1991

1992

1993

1994

1995

1996

1997



Chronology of Events

RSA

7/91 9/91

3/93

1990

1991

1992

1993

1994

1995

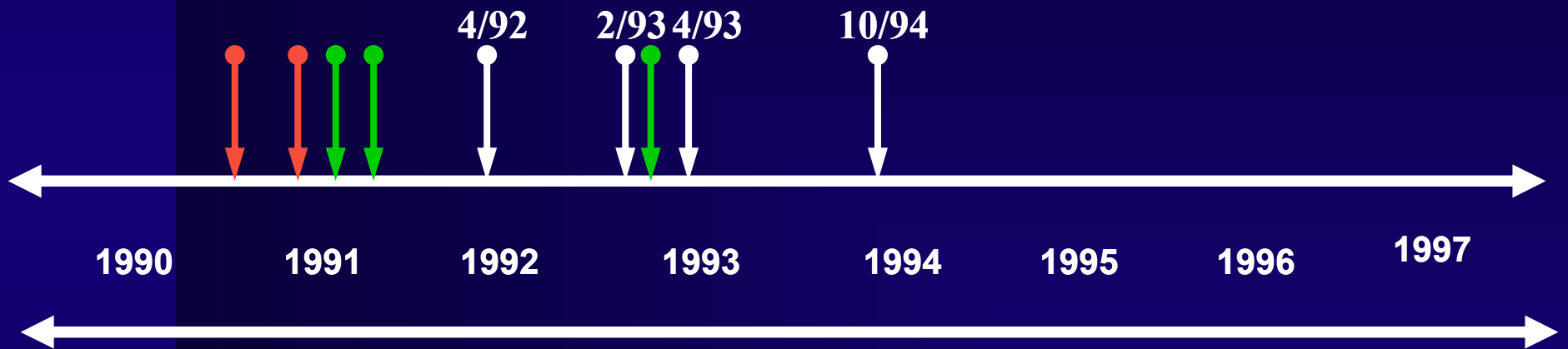
1996

1997



Chronology of Events

DPRK



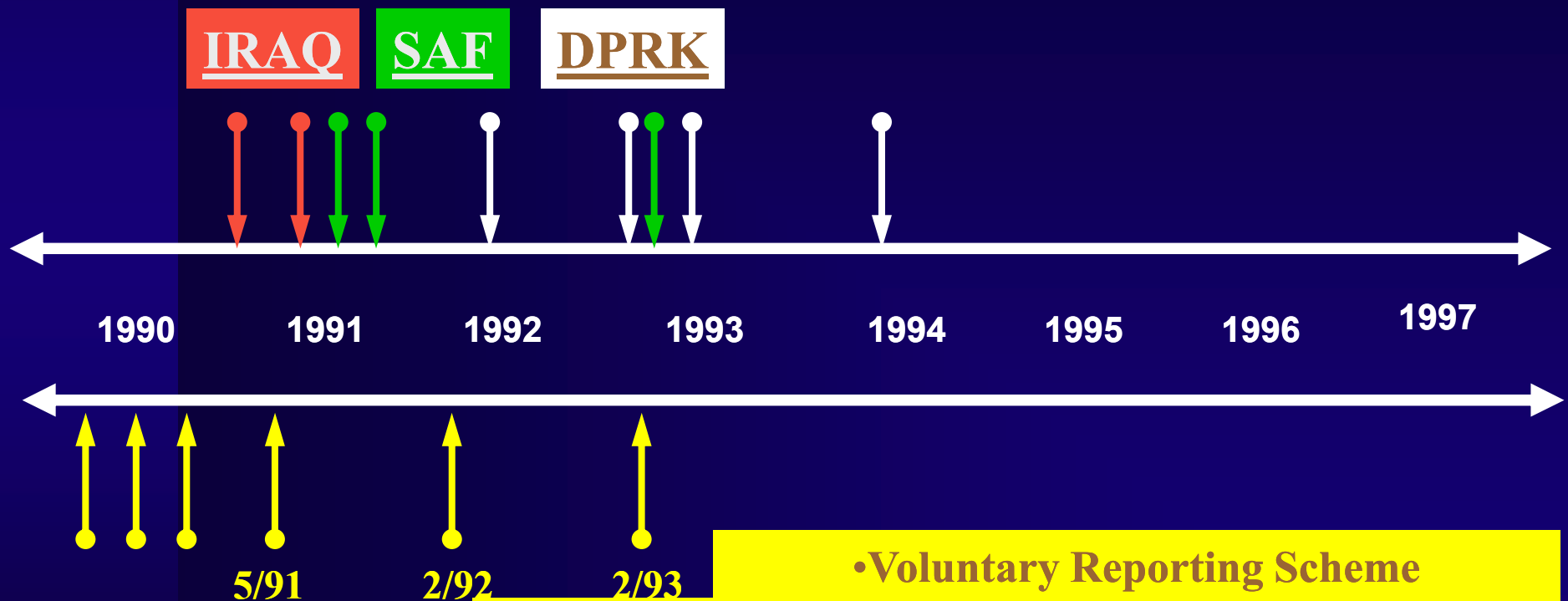


Chronology of Events





Chronology of Events

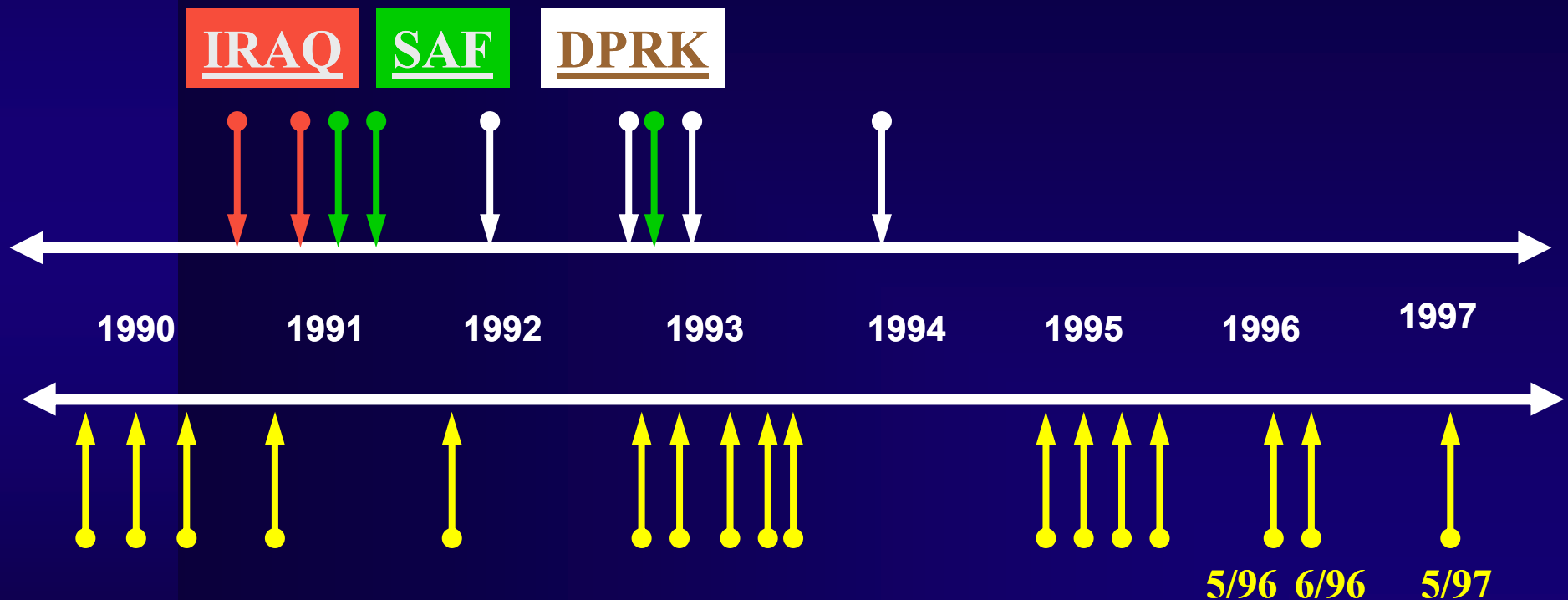


• Voluntary Reporting Scheme

- GOV paper and decisions on special inspections and early provision of design information
- GOV paper on improved SG procedures



Chronology of Events



- MAP approved by Board
- Com. 24 established to negotiate text
- Draft Model Additional Protocol to Board



CSAs – Shifting Perceptions

... the Agency's right and obligation to ensure that safeguards will be applied ... on ALL source or special fissionable material in all peaceful nuclear activities within the territory of the State, under its jurisdiction or carried out under its control anywhere ...



Refined Objective

**Assurances of Correctness and
Completeness of a State's Nuclear
Material Declarations**



Safeguards Coverage: CSAs with APs

➤ Information

- Early provision of design information
- Past nuclear activities
- R&D involving nuclear material
- Improved information analysis

➤ Access to Locations

- Beyond strategic points in facilities and locations outside of a facilities (LOFs) (for DIV; *ad hoc* inspections)
- No notice inspections
- Access to undeclared locations for special inspections

➤ New Technologies

- Remote monitoring
- Environmental sampling



Measures within INFCIRC/540 - APs

Additional information

- **Exempted, terminated, pre-34(c) material**
- **Sites of facilities and LOFs**
- **Nuclear fuel cycle infrastructure not involving NM**

Broader access to locations

- **Any place on a site and any locations where NM is present**
- **Decommissioned facilities and LOFs**
- **Other locations identified with nuclear related R&D; functionally related**
- **Any location specified by the Agency for environmental sampling**

Improved administrative arrangements

- **Simplified visa and designation requirements**
- **State of the art communications**



Small Quantities Protocol (SQP) - 2005

- **State eligibility for SQP (GOV/INF/276, Annex B):**
 - Little or no nuclear material *and*
 - No existing or planned nuclear facility
- Holds in abeyance much of State's reporting and access requirements
- Reinstates obligation to:
 - Provide an initial report on nuclear material
 - Permit Agency access to verify the initial report
 - Provide early information on any decision to construct a nuclear facility



Safeguards Coverage: CSAs with APs

