



United States Nuclear Regulatory Commission

Protecting People and the Environment

IAEA Traditional Safeguards Implementation Process in the USA for U.S. NRC Licensees

David Hanks

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

U.S. Legal Framework

- U.S. Atomic Energy Act of 1954, as amended
 - Responsible organizations
 - By-product, source, and special nuclear material
 - Licensing of installations
 - Inspection and enforcement
 - International activities (including import/export)
 - Information and technology protection
- Energy Reorganization Act of 1974
 - Nuclear Regulatory Commission—Civilian nuclear facilities
 - Energy Research and Development Administration (Department of Energy (DOE) precursor)—DOE nuclear facilities

U.S.-IAEA Safeguards Agreement 1980

- The U.S. allows the IAEA to apply safeguards on all source or special fissionable material within the U.S., only excluding facilities associated with activities with direct national security significance.
- The U.S. periodically provides the IAEA with a list of facilities eligible for the application of safeguards within the U.S. adding or removing facilities from that list as necessary.
 - The Eligible Facilities List (EFL) is routinely reviewed and updated.
 - Revisions to the EFL are submitted for a 60-day Congressional review before they are submitted to the IAEA.
- The IAEA can select facilities from the list in which the IAEA wishes to apply safeguards.
 - The U.S. submits a completed Design Information Questionnaire and negotiates a Facility Attachment for those selected facilities.

U.S. SSAC (Shared responsibilities)

- **DOS** – Serves as the official contact for the U.S. government. Establishes U.S. policy. Chairs the IAEA Steering Group Subcommittee on International Safeguards and Monitoring (SISM).
- **DOD**—Responsible for activities that take place at DOD owned, operated or leased locations.
- **DOE**—Responsible for activities that take place at DOE owned, operated or leased locations. Provides resources and technical expertise.
- **NRC**—Responsible for activities that take place at NRC licensed-locations. Chairs the Subgroup on International Safeguards in the U.S. (SISUS).
- **DOC**—Responsible for activities that take place at locations not covered by DOD, DOE or NRC.

NRC – IAEA Safeguards Obligations

- **International Obligations**
 - Safeguards Regulatory Authority for implementing IAEA Safeguards at NRC licensed facilities
 - Maintain NRC portion of the U.S. Eligible Facilities List
 - Import/Export licensing (nuclear materials and nuclear related equipment)
 - Reporting select facility data to IAEA
 - Track foreign obligated materials within the U.S.
- **Negotiation Between IAEA and Licensed Facilities**
 - Subsidiary Arrangements and Facility Attachments
 - Design Information Questionnaire
 - Notifications to Facility of IAEA Inspections/Visits/Complementary Access
- **NRC Licensed Facilities**
 - Ensure compliance with Federal Regulations associated with IAEA SGs
 - Review of reports/records submitted to the IAEA
 - Ensure requested amplification and clarification of information is provided to IAEA

Transparency and Regulatory Guidance

- US-IAEA Safeguards Agreement (INFCIRC/288)
 - Voluntary Offer Agreement (VOA)
 - U.S. is willing to accept IAEA safeguards
 - Expensive undertaking because of number of U.S. facilities
 - List of eligible facilities provided to IAEA for selection
- U.S. Code of Federal Regulations (CFR)
- Title 10 –Energy
 - Protect the public health and safety
 - Promote the common defense and security
 - Protect the environment

Transparency and Regulatory Guidance

- **Title 10 CFR Applicable Parts Related to Int'l Safeguards for NRC Licensed Facilities**
 - Part 40, Domestic Licensing of Source Material
 - Part 50, Domestic Licensing of Production and Utilization Facilities
 - Part 70, Domestic Licensing of Special Nuclear Material
 - Part 74, Material Control and Accounting of Special Nuclear Material
 - Part 75, Safeguards on Nuclear Material-Implementation of US/IAEA Agreement
 - Part 110, Export and Import of Nuclear Equipment and Material

10 CFR 75 Implementation of US-IAEA Safeguards Agreement at Licensed Facilities

- **Purpose** - Implement U.S.-IAEA Safeguards Agreements at NRC and Agreement State licensees
 - U.S.-IAEA Safeguards Agreement and its Protocol
 - U.S.-IAEA Additional Protocol
- **Scope**
 - All persons licensed by the NRC or an NRC Agreement State to possess source or special nuclear material (SNM)
 - All license applicants to construct a facility or receive SNM
 - Manufacturing activities at NRC regulated facilities as required by the Additional Protocol

10 CFR Part 75

- IAEA Inspections/Visits at Licensed Facilities
 - Types
 - Ad Hoc, Routine, Special, Complementary Access
 - Notification of inspection request by IAEA
 - IAEA inspector access authorization
 - Authorized inspector activities monitored by NRC
 - Facilitate to IAEA inspections
- Information Provided to IAEA
 - Design Information Questionnaire (DIQ) for facilities selected
 - Negotiated Facility Attachment for facilities selected
 - Inventory changes for facilities selected
 - Additional Protocol declarations

U.S. International Safeguarding Experience

- U.S. facility experience from 1981-Present
 - Spent fuel pool storage facility
 - Reactors (6)
 - Fuel fabrication facilities (6) - 3 currently reporting
 - Gas centrifuge enrichment plant
 - HEU storage vault
 - Pu storage vault (3) - 1 active
 - HEU Down blending facilities

Transitioning Selected Facilities

- U.S. facility selection by IAEA for Safeguards
 - IAEA decision for selection from Eligible Facility List (EFL)
 - Communication of Selection
 - Official Letter from IAEA to U.S. Department of State
 - U.S. Mission to the International Organizations in Vienna, Austria (UNVIE)
 - Copies to NRC and other relevant Federal agencies
 - Licensee notification—written notice from NRC
 - Licensed facility should expect
 - Provide a completed IAEA Design Information Questionnaire (DIQ)
 - Provide an initial physical inventory listing of all nuclear material
 - Inventory and change reports will be sent through NMMSS to the IAEA
 - Facility Attachment developed—specific technical and admin procedures
 - IAEA performs an initial site visit or inspection

Goals and Objectives of Selection

- Primary goals of selection in VOA State
 - Gain experience at advanced nuclear fuel cycle facilities
 - Lessons learned
 - Improve IAEA ability to draw a safeguards conclusion in NNWS
 - Test innovative safeguards methods
 - Complicated facilities demand large amounts of resources
 - Industry continuously improves its processes
 - New possibilities for plausible proliferation pathways
- Fulfill expectations of NNWS that some facilities in U.S. are subject to IAEA safeguards

IAEA-NRC-Operator Interface

- Strengthening nuclear safeguards through cooperation
 - Operator
 - No one knows the facility better
 - Acceptance of social responsibility—prevent spread of nuclear weapons
 - Foster peaceful use of atomic energy
 - NRC
 - Provide regulatory guidance
 - Facilitate exchanges between the licensee and IAEA
 - IAEA
 - Implement beneficial safeguards approach
 - Minimize impact to operations of the facility
 - Make full use of the U.S. SSAC

Conclusion:

- Selection of a facility in the U.S. would assist the IAEA in addressing challenges it faces because of the enormity of implementing safeguards around the globe.
- Strengthening an approach through proven advanced safeguards concepts and instrumentation could reduce the amount of operator support required during inspections and visits by the IAEA.
- Open communications and increased transparency between the facility, the U.S. NRC, and the IAEA during the traditional safeguards implementation process should result in an environment of enhanced cooperation in meeting US-IAEA Safeguards Agreement obligations.

Questions?