Implementation Practices of Finland in Facilitating IAEA Verification Activities

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Nuclear Activities in Finland, 2014

OL3
Under construction

OL4
Decision in Principle

TVO: Olkiluoto NPP

Posiva, owned by TVO & Fortum: Final repository for spent fuel

Helsinki region:
- VTT, FiR-1 Research Reactor
- Helsinki University
- STUK

Geological Repository
• depth 455 m

TALVIVAARA
Mining Company; Nickel mine, application/license for uranium production

FENNOVOIMA
Decision in Principle
NPP to Pyhääjoki

Fortum: Loviisa NPP

Handful of small holders and LoFs

Posiva, owned by TVO & Fortum: Final repository for spent fuel

Photos and logos: TVO, TVO/Hannu Huovila, Fortum, Posiva, Fennovoima, Talvivaara, Google

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Main Steps in Safeguards – Strong Commitment and Long History

- **Mission:** Safeguards is a prerequisite for the peaceful use of nuclear energy

**Timeline:**
- **1947:** Paris Peace Treaty
- **1970:** Non-Proliferation Treaty
- **1972:** Safeguards Agreement, INFCIRC/155
- **1995:** Joining to the European Union; INFCIRC/193
- **1998:** EU states signed the Additional Protocol
- **2000:** Finland ratified the Additional Protocol
- **4/2004:** Additional Protocol into force in EU
- **7/2004:** First AP Declarations
- **12/2004:** First Complementary Access
- **10/2008:** Integrated Safeguards
Safeguards Regulations

- Non Proliferation Treaty (NPT)
- IAEA Agreement and it’s Additional Protocol (INFCIRC/193, Add. 8)
- UN Security Council Resolution 1540
- Euratom Treaty (EAEC)
- Commission Regulation (EURATOM) No 302/2005
- Council Regulation (EC) 428/2009 (export of dual-use items)
- Bilateral Agreements
- Nuclear Energy Act and Decree
- STUK Guides
  - YVL D.1 Regulatory control of nuclear safeguards
- Nuclear Safeguards Manual
  - Prepared by operator
  - Description how to fulfil safeguards obligations in the facility
  - Part of the facility’s quality and management systems
  - Approved by authority
  - Basis for system inspections and audits
## Division of Roles Between Regulator and Operator

<table>
<thead>
<tr>
<th>Regulator STUK</th>
<th>Operator</th>
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<tbody>
<tr>
<td>Maintain State System of Accounting for and Control of Nuclear Materials</td>
<td>Appoints person responsible for the control of nuclear material</td>
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<td>Takes care of licensing and approvals</td>
<td>Applies for license</td>
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<td>Controls all activities related to nuclear materials</td>
<td>Keeps nuclear material accountancy</td>
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<td>Observes nuclear fuel cycle related R&amp;D</td>
<td>Make nuclear material reporting</td>
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<td>Maintains national Nuclear Materials database</td>
<td>Prepare a Nuclear Safeguards Manual</td>
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<td>Inspects and verifies information provided by operators</td>
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New nuclear facility and Safeguards by Design (SBD)

1. Decision in Principle
   - Article 42 of the Safeguards Agreement: “... The time limits for the provisions of design information in respect of the new ... shall be provided as early as possible before nuclear material is introduced into a new facility.
   - In Finland: “... the preliminary design information of any new facility within 60 days of the date when the decision-in-principle on the nuclear facility is ratified by Parliament...”
     Material Balance Code for the new facility; the dialogue between the IAEA and the State starts. What are the IAEA safeguards needs for this type of facility?

2. Construction License
   - IAEA Safeguards plan for the new facility.
   - STUK statements on safety, security, safeguards and emergency preparedness (EP).
   - Nomination of responsible persons for safety, security, safeguards and EP.
   - Preparation of Nuclear Material Handbook.

3. Operating License
   - Procedures for Safeguards implementation are ready.
About Practical Safeguards Implementation 1/2

Reports and declarations
- Need to understand how information contribute to the IAEA objectives and finally to the peaceful use of nuclear materials in a State.
- Good to have antennas up to recognize if there are some things which need clarification.

Inspections
- Objective that verification activities are done successfully, effectively and with good quality:
  - Designation and approval of IAEA inspectors
  - Access procedure to the facility; identity card and assignment
  - Activities during the inspection; right people available, keys, equipment etc
  - Methods and equipment, their approval in advance

Synergies and interfaces
- Safeguards is a part of the fuel cycle activities and some safeguards data is sensitive.
- Need to coordinate deliveries and inspection activities with safety and security experts.
About Practical Safeguards Implementation 2/2

Management
- Good leadership on activities, chairman for negotiations, overall picture,…
- In Finland STUK always participates to the IAEA inspections.

Analyzing and reporting on activities and results
- STUK’s annual report on “Implementing nuclear non-proliferation in Finland. Regulatory control, international cooperation and the Comprehensive Nuclear-Test-Ban Treaty”.

Trust **and verify!**

But you can also use “lessons learnt” and “good practices” by other Member States, collection of SIP Guidelines!

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