

Protection against unauthorized removal of nuclear material during use, storage and transport and sabotage of nuclear material and nuclear facilities in Finland

International Conference on Physical
Protection of Nuclear Material and
Nuclear Facilities

Vienna, Austria Nov 16th, 2017

Mr. Tapani Hack
Section Head

Outline

1. Roles and responsibilities for nuclear security in Finland
2. Cooperation (shared responsibilities)
3. Protection against unauthorized removal of nuclear material
4. Protection against sabotage of nuclear material and nuclear facilities
5. Safety-security-safeguards interface
6. Regulatory framework
7. Summary

1.1 Roles and responsibilities for nuclear security in Finland

- STUK is the independent, competent authority in the use of nuclear energy.
- STUK has a mandate to regulate activities under this mandate.
- Nuclear Security Section in STUK is responsible for physical protection and cyber (computer) security related topics.
- Operators are responsible for nuclear security at the facilities and during transport of nuclear material.
- National authorities have designated responsibilities for nuclear security (e.g. Police, Customs, The Finnish Border Guard, The Finnish Defence Forces).
- Finnish Intelligence Security Service (SUPO) is responsible for threat assessment for nuclear security and to conduct background checks.
- Based on threat assessment, STUK shall develop a design basis threat (DBT) used by the licensees.

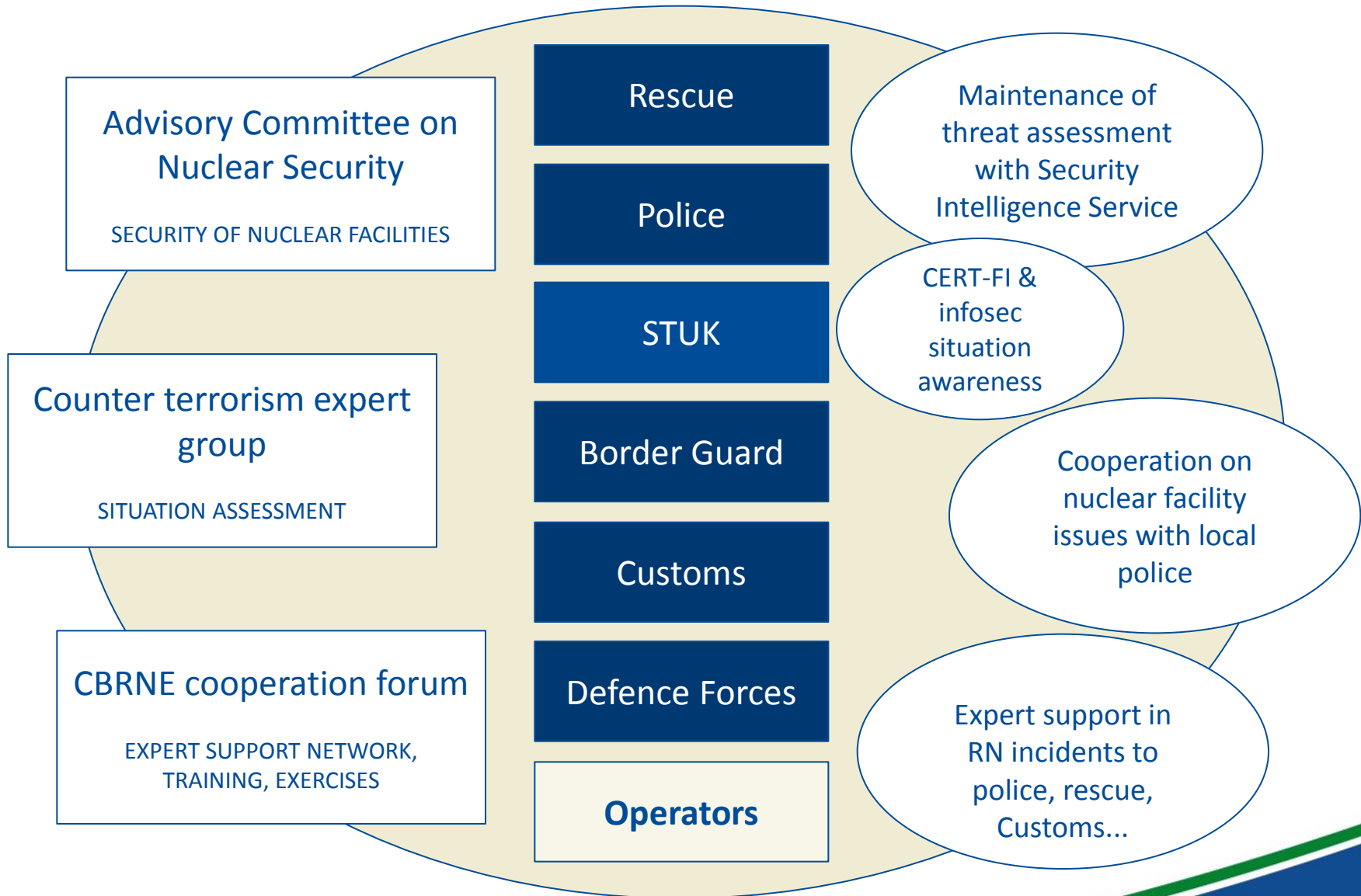
1.2 Roles and responsibilities for nuclear security in Finland

- Based on requirements, the operator shall have security organization for prevention, detection, delay and response.
- Characteristics of security organization are defined in the security plan and security standing order, both approved by STUK.
- Security organization is equipped and trained against the threats defined in the DBT.
- Operator is responsible for alarming STUK and police in case of nuclear security event.
- Off-site response is managed by police (local/national), Defence Forces and Border Guard, commanded by a police commander.
- STUK has 24/7 expert on duty.
- Customs/police have detection equipment to detect radioactive materials. Officers are trained by STUK.
- STUK has reachback service for comprehensive detection architecture.

2. Cooperation (shared responsibilities)

- Cooperation between authorities and operators has a long tradition in Finland.
- Based on national characteristics (low number of police officers, long distances) this approach has been seen as the only way to manage (nuclear) security events.
- The approach includes, but is not limited to:
 - Joint exercises, including safety&security (all stakeholders)
 - Preparation of documents (contingency plans & emergency plans)
 - Joint networks (e.g. protected sharepoint)
 - Joint communication system (encrypted TETRA-network)
 - Joint seminars
 - Joint tactics
 - Common "operating" language

Cooperation groups and joint activities



3 Protection against unauthorized removal of nuclear material during use, storage and transport

- Some arrangements used against theft:
 - Background checks
 - Two-person rule
 - Detection measures (2pr, security checks, access control, CCTV, RPMs, seals)
 - Delay measures (barriers, locks, key-control, turnstiles, biometrics)
 - Response measures (on/off-site response forces)
 - Nuclear security culture (e.g. observations by employees)
- For transport:
 - Security transport plan (approved by STUK)
 - Joint planning with police and Finnish Transport Safety Agency
 - Police escort (graded approach)
 - Monitoring (tracking via encrypted channels)
 - On/off-site response

4 Protection against sabotage of nuclear material and nuclear facilities

- Some arrangements used against sabotage:
 - Vital area identification
 - Barriers, key-control, locks, biometrics, two-person rule, access control, security checks, background checks, CCTV, multiple layers etc.
 - On/off-site response
 - Nuclear security culture (e.g. observations by employees)
- For transport:
 - Security transport plan (approved by STUK)
 - Joint planning with police and Finnish Transport Safety Agency
 - Police escort (graded approach)
 - Monitoring (tracking via encrypted channels)
 - Transport casks require approval from STUK
 - "Low-profile transport"
 - On/off-site response

5 Safety-security-safeguards interface

- STUK is a "3S-house"
- This approach is taken into account for following activities:
 - Joint safety-security exercises
 - Document handling
 - Licensing
 - Inspections
- Joint inspections are carried out regularly, including representatives from:
 - Security section
 - Safeguards section
 - Safety sections
 - Resident inspectors
 - Police
 - Also, depending on the focus of the inspection: experts from CERT-FI/else.

6 Regulatory framework

- Nuclear Energy Act, STUK regulation in the use of nuclear energy, YVL-guides are under revision.
- The current framework meets the majority of the recommendations in NSS 13.
- STUK requested an international expert in 2016 to carry out independent assessment of regulatory nuclear security framework. The objective is to improve regulatory framework to meet all the recommendations of NSS 13.
- CPPNME is also carefully reviewed, but no gaps have been identified.

7 Summary

- The current arrangements meet the requirements recommended/required by the international legal/guidance instruments.
- There is always room to improve current practices.
- The Finnish approach is based on national circumstances and is heavily depending on cooperation.
- Experiences have shown that the concept is working well.
- Recognizing need-to-know and need-to-share is important.
- Regulatory framework requires continuous assessment and updating to improve nuclear security.
- The IAEA NSS series is an important tool for nuclear security.