Strål
säkerhets
myndigheten
Swedish Radiation Safety Authority

Security – Safety Interface in Practice

Lessons learned from the Swedish joint regulatory project

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Background to the regulatory situation

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Swedish Radiation Protection Institute

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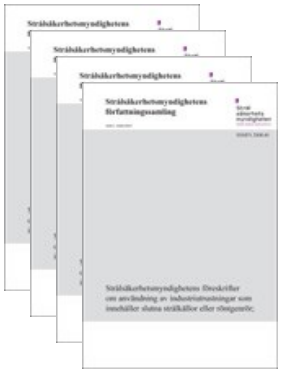
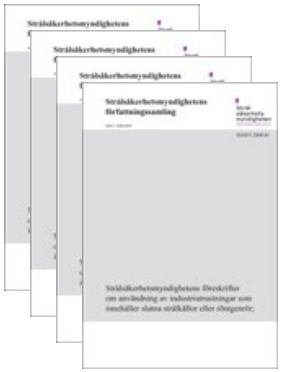
SKi
Swedish Nuclear Power Inspectorate





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The new regulatory approach

Legislation: EU legislation, Environmental Code, Nuclear Activities Act/ordinance, Radiation Protection Act/ordinance

Regulations:

1. Jointly for all activites

- Basic Regulations for all Licensable Activites involving Ionizing Radiation

2.Facility/activity level

- Regulations on Construction Requirements for Nuclear Facilities
- Regulations on Analysis and Evaluation for Radiation Safety for Nuclear Facilities
- Regulations on operations of nuclear Facilites
- Regulations on Decomissioning of Nuclear Facilites

3.Specific aspects

- Regulations on specific Radiation Safety Aspects

ex

- Regulations on Information Security for nuclear facilities

Level of details

Structure of Regulations (Construction of NPPs)

- Ch.1 Application and Definitions
- Ch.2 Generic Requirements
  - Risk profile
  - Defence in depth and barriers
  - Organization, Command & Control
- Ch.3 Requirements on facility and functional level
  - Fundamental radiation safety functions
  - Radiation safety classification
  - Emergency preparedness
  - Waste and decommissioning
  - Multiple facilities on the same location

Structure of Regulations (Construction of NPPs cont)

- Ch 4 Requirements on specific construction solutions
  - Reactivity control
  - Heat removal
  - Reactor containment and shielding of sources
  - Fuel and core
  - Preassure and load bearing SSC
  - Power supply
  - **Control room**
  - **Physical protection**
  - Fire protection
  - Spent fuel pool
  - Ventilation

Examples of S&S interface

- Evaluation and analysis of all initiating events that might pose a threat to the safety of the reactor

  - Internal events
  - Internal hazards
  - External hazards
  - Malicious acts

S&S interface (cont)

- Identify anticipated events and conditions
- Categorise and divide into event classes (plant states)
- Analyse and assess development over a certain period of time
- Analyse and assess the resulting radiation protection impacts against design criteria, in terms of doses to workers and general public and releases to the environment

S&S interface

Design basis threat levels	Plant state/Event class (H1-H5)	Construction Criteria, mSv (existing reactors)
-	H1	
DBT1	H2	1
DBT2	H3	10
DBT3	H4A	100
DBT4	H4B	100
DBT5	H5	100TBq Cs137

Example of a provision

"§53 A nuclear power reactor should be constructed with a physical protection system that enables the continuous operations of the fundamental safety functions during security events from H2-H5.

The physical protection system should be constructed with:

- *A limited access area*
- *Protected areas within the limited access area, and*
- *Vital areas.."*

Implications for security

- Language
  - Swedish got one word for safety and security
  - Use of terms – DiD, Barrier etc
  - ”Safetyfication” of security terminology
- Integration in a shared publication
  - No stand-alone security publication -Lack of visibility?
- Internal cooperation
  - allocation of resources and priorities
- Competence
  - New way of regulating and inspecting

Conclusion

- Holistic approach to the overall safety of the reactor
- All regulatory requirements together based on characteristics as opposed to subject matter
- Security/safety interaction and interdependability enhanced through the joint approach
- Focus on what we have in common as opposed to our differencies
- Acknowledge and respect the differencies!

Thank you!

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