



Implementation of Safety Assessment by the Regulatory Authorities in Denmark

Workshop on Safety Assessment for Decommissioning of Research Reactors

National Institute of Radiation Protection
Haraldur Hannesson

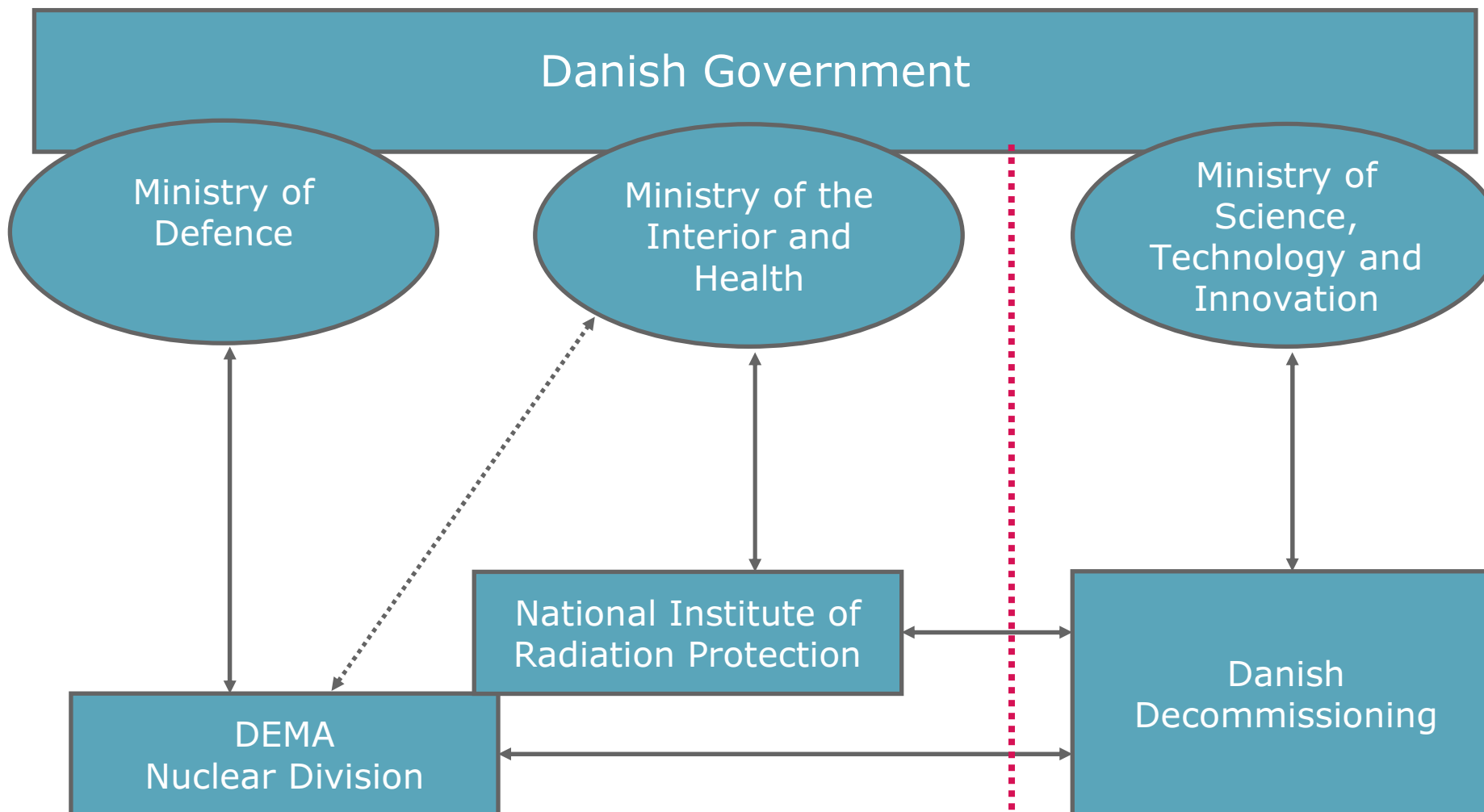
Parliament decision B48

Risø National
Laboratory



Danish
Decommissioning

Decommissioning - Responsibilities



Denmark is small - Resources are limited



Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

New operational limits and conditions – the essentials

- Detailed specification of the legal basis.
- Precise specification of key functions and responsibilities.
- Requirements on the establishment of an ISO 9001 certified QMS.
- Requirements on administrative structure (Project adm. vs. Safety org.).
- Requirements on decommissioning plans.
- Specification of new discharge limits.
- Specification of clearance criteria and nuclide specific clearance levels.

Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

General Decommissioning Plan – the essentials

- Contents
 - Description of site and background
 - Legislative background
 - Principles for decommissioning
 - Radiation protection principles
 - Waste management
 - Etc.

- Structured on the basis of IAEA Safety Guide No. WS-G-2.1 Decommissioning of NPP's and RR's.

- Always describe rationale and information behind any choice of method, technique, equipment and expertise.

- Avoid listing of potential solutions. Regulatory authorities do not choose between a set of solutions.

- Always refer to national/international regulations, recommendations and experience whenever possible.

Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

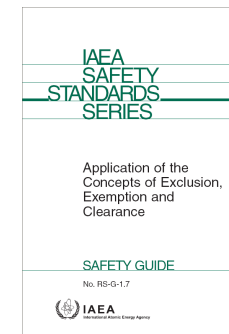
Clearance Criteria

Process

- From regulator to operator. Strong adherence to international recommendations.

Key points

- Materials: Mass specific clearance levels [IAEA, Safety Guide No. RS-G-1.7].
- Items & buildings: Surface specific clearance levels [European Commission, RP 113].
- Averaging: permitted up to 1000Kg or 1m³. If reasonably achievable partial volumes with concentrations above the clearance levels shall be cut away.
- Clearance accredited by the Danish Accreditation and Metrology Fund (DANAK) according to the ISO 17025 standard



Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

Inspections

- Administrative
 - Decommissioning plans
 - Work plans for all major individual decommissioning operations

 - Monthly reports of dosages
 - Final reports of completed decommissioning projects
 - lessons learned
 - Annual reports

- and ...

Inspections – on site



Framework for DD to operate within

- The laws
- Operational limits and conditions
- General decommissioning plan
- Decommissioning plans for each facility
- Work plans for all major individual decommissioning operations
- ISO 9000
- Accredited clearance of materials and buildings

- Monthly reports of dosages
- Final reports of completed decommissioning projects
 - lessons learned
- Annual reports

- On site inspections

Key Points

- Regulatory authorities adjust the level of monitoring/surveillance with use of the operational limits and conditions
- Rules and regulations are based on IAEA recommendations
- Communication
 - Reports are structured according to IAEA recommendations
 - Is formal **AND** informal
 - Is of course honest