

A harmonized approach for establishing criteria for all radioactive wastes

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Values of harmonization

Transparent societal goals

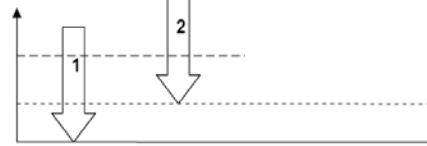
- Easy-to-understand systems
- Harmonized protection goals for public exposure

International references

- IAEA "DS354 SR: Disposal of Radioactive Wastes"
 - ICRP 81 Radiation Protection Recommendations as Applied to the Disposal of Long-lived Solid Radioactive Waste
 - BSS (EURATOM, IAEA) - exemption concept
- * Observe that VLLW is not excluded!

Clearance and disposal at < 0.3 mSv/a

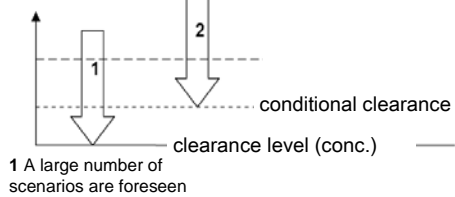
Concentration
(Bq/kg)



Clearance and disposal at < 0.3 mSv/a

Concentration
(Bq/kg)

2 Barriers or institutional control limit the number of scenarios



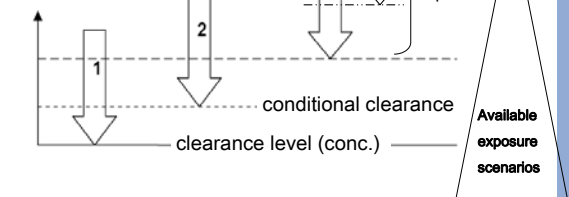
Clearance and disposal at < 0.3 mSv/a

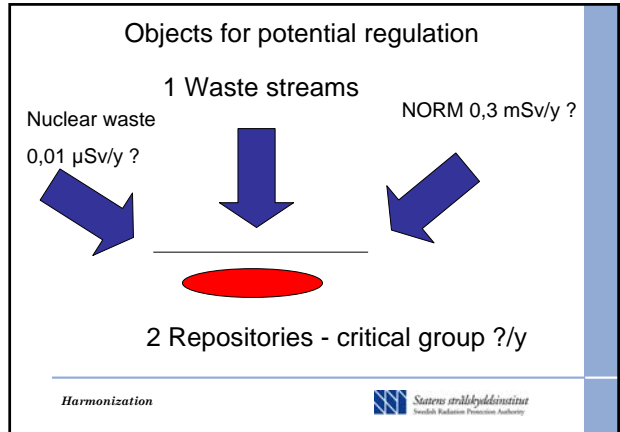
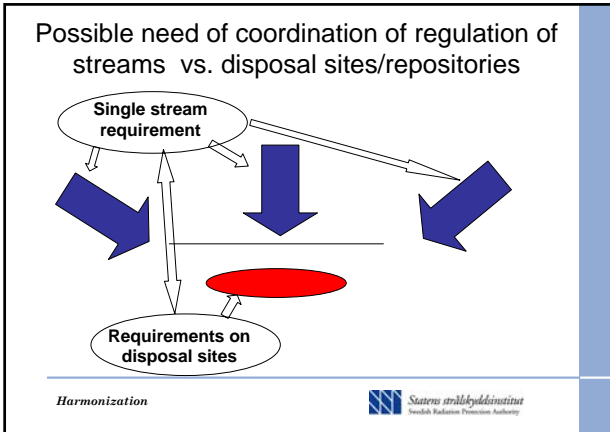
Concentration
(Bq/kg)

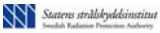
Spent fuel

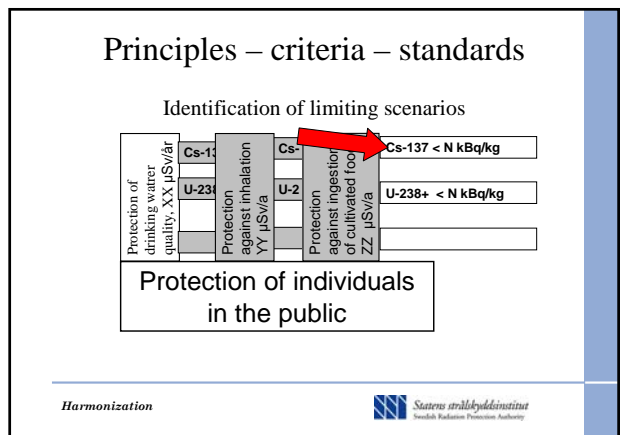
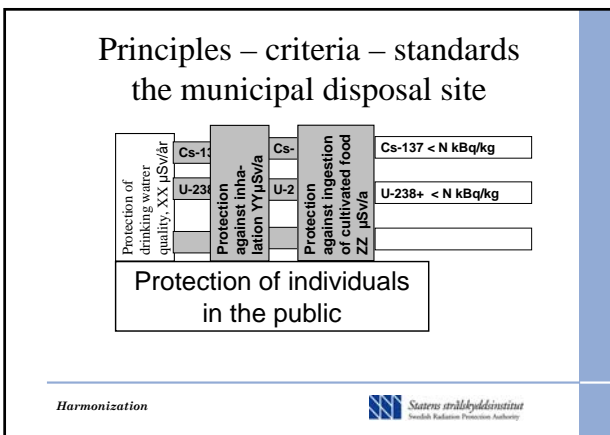
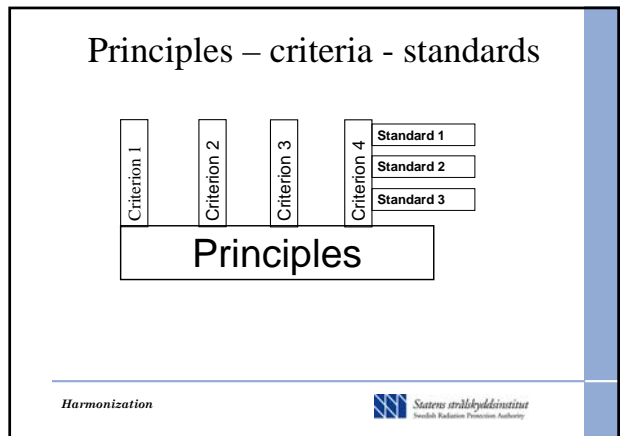
VLLW / LLW / ILW

Disposal in repositories





- ### Regulatory components
- Principles
 - Criteria
 - Standards
- Harmonization 

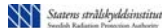


Harmonization factors

Harmonization

- **does not imply** that all types of rad. waste disposal are regulated by a single rule
- **implies** that due consideration has been given to a number of factors

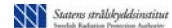
Harmonization



Three types of harmonization factors

- 1 Societal factors
- 2 Practice-related factors
- 3 Property-related factors

Harmonization

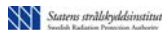


Harmonization factors 1

1 Societal factors

- Resources are needed - implying policy/political decisions regarding
 - economy and responsibility
 - choices between alternatives practices creating waste
- Societal and economical factors will also influence the boundary conditions of the required optimization process or application of the BAT, principle
 - Example: optimize doses by choosing best site. Best in the country or best of available after governmental decisions?

Harmonization

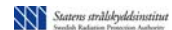


Harmonization factors 2

2 Practice-related factors, related to whether

- the waste is a result of an on-going activity or not
- the waste comes from a regulated process or not
- the waste production is incompletely known or not
- a stream is temporary or continuous
- a waste stream can be lead into alternative waste disposal facilities

Harmonization

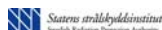


Harmonization factors 3

3 Property-related factors

- The properties of the wastes' radioactive substances, e.g. radiotoxicity and half-life
- The total amount and concentration of radioactive substances in the waste
- Potential intrusion

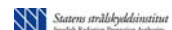
Harmonization



Take the factors into account with some words on the way

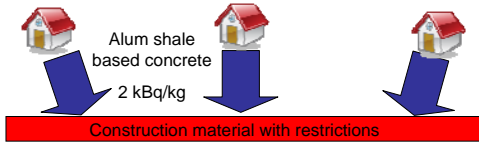
- *10 microsievert/y*. Normally no further need for supervision from the point of view of radioprotection
- *100 microsievert/y*. Represents a burden on future societies, which constitutes a reason for regulation, but not necessarily an undue burden
- *1 mSv/y*. Represents a dose that can be accepted in an exceptional situation of intrusion in a land-fill repository. (ICRP 81 span of 10-100 mSv should be reserved for repository with stronger barriers or institutional control)

Harmonization



Many remaining principles for discussion

1 Dilution / dilution-related issues



- 2 Averaging issues in compliance assessment
- 3 Limitation of available repositories (geological)
- 4 Information conservation – as optimization/BAT

Harmonization

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