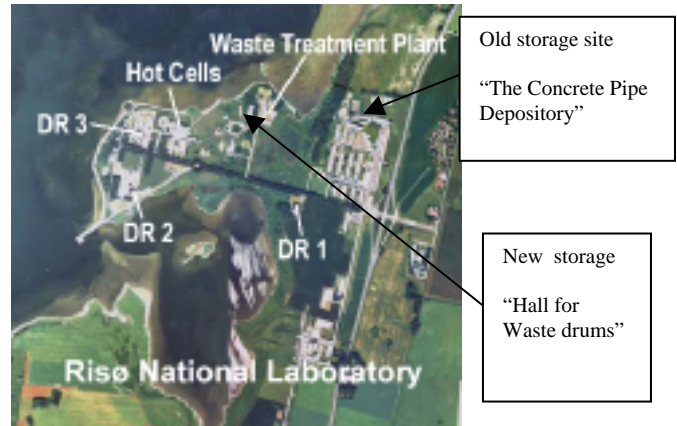


Moving a deposit of nuclear waste and remediation of the area

Hanne Troen, Risø National Laboratory, Denmark.

History

- A depository of low radioactive waste contained in drums, put in concrete pipes, stacked with cover on top - an "outdoor" storage - was moved to an "indoor" storage
- The ground was cleaned to "green field"
- The radioactive waste was repacked in drums and stored at "Hall for Waste Drums"
- The concrete was crushed and given free by the Danish authorities to be used as filling everywhere
- The crushed concrete was used as filling at the old site - but some of it was taken outside Risø by mistake



The plan

- Risø had permission to use the crushed concrete as filling at the Risø site
- The concrete was crushed at the Risø site by a hired demolition firm
- The information given about the concrete - was, that it was normal concrete, it was not radioactive waste

The mistake

- The crushing machine used at the Risø site was too small to crush all the concrete
- To crush the residual the firm put it on a lorry and drove it to a bigger machine outside the Risø site
- Another mistake was, that some concrete containing ^{60}Co (1,5 Bq/g – total 10 – 30 MBq) was crushed at the same time – it had no marks.

Measured radioactivity in the crushed concrete

Radionuclid	Concentration (Bq·g ⁻¹)
^{60}Co	0.1
^{137}Cs	0.5
^{133}Ba	0.03
^{14}C	13
^{90}Sr	0.5
Pu	0,005

- survey at the remediated ground

	μR/h				
	No.1	No.2	No.3	No.4	No.5
A	5	5	5	5	7
B	5	6	6	5	5
C	5	5	6	5	5
D	7	6	6	6	6
E	6	5	5	5	5

Consequences

- No doses given to the environment or to people
- The authorities said, that Risø had violated the allowance.
- And this was a symptom of deteriorated safety culture
- The crushed concrete was deposited at the old site