

NUCLEAR FLEET ALIGNMENT AND APPLICATION OF RADIATION PROTECTION

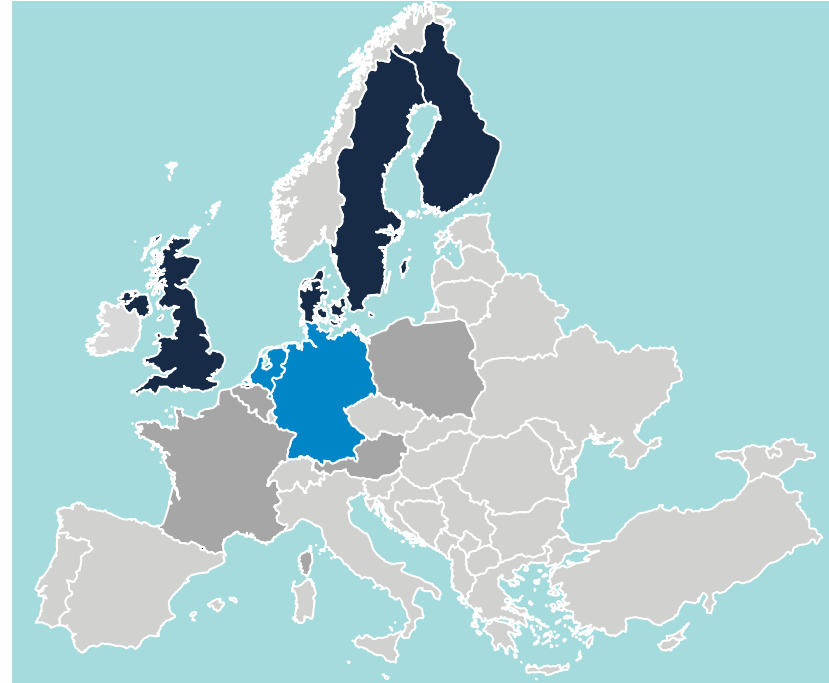
Risikokollegiet, Stockholm, 2017-04-28

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Nuclear Fleet Development, Vattenfall

VATTENFALL IN BRIEF

- One of the largest electricity companies in Europe
- 119 TWh/year (2016)
- Production, distribution and sales
- 20 000 employees



VATTENFALL NUCLEAR – MUCH MORE THAN 7 REACTORS

NPP's in operation

Forsmark



Ringhals



Backend facilities in operation

SFR



CLAB



M/S Sigrid



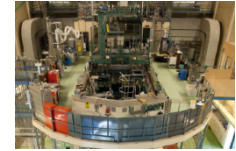
Backend facilities under construction



Deep Repository
for Spent
Nuclear Fuel

NPP's in decommissioning

R2 and R2-0



Brunsbüttel



Ågesta



Krümmel



RADIATION PROTECTION IN VATTENFALL

- Operational exposure (Forsmark and Ringhals 2016)
 - 62 000 annual TLD-dose evaluations
 - 2700 exposed workers
 - 3 Sv collective dose (1.1 mSv/person)
- Protection of the public and the environment
- Emergency preparedness

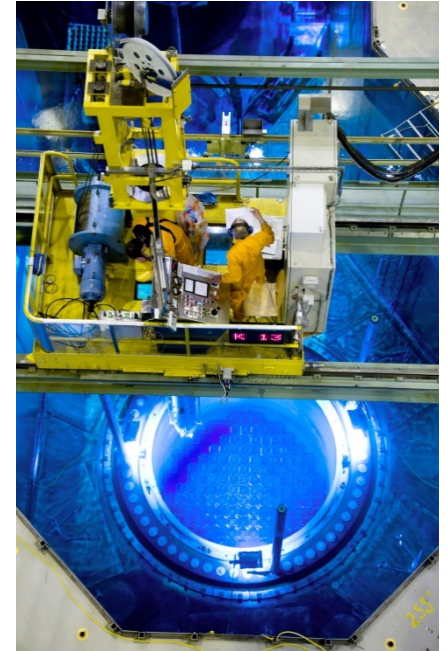
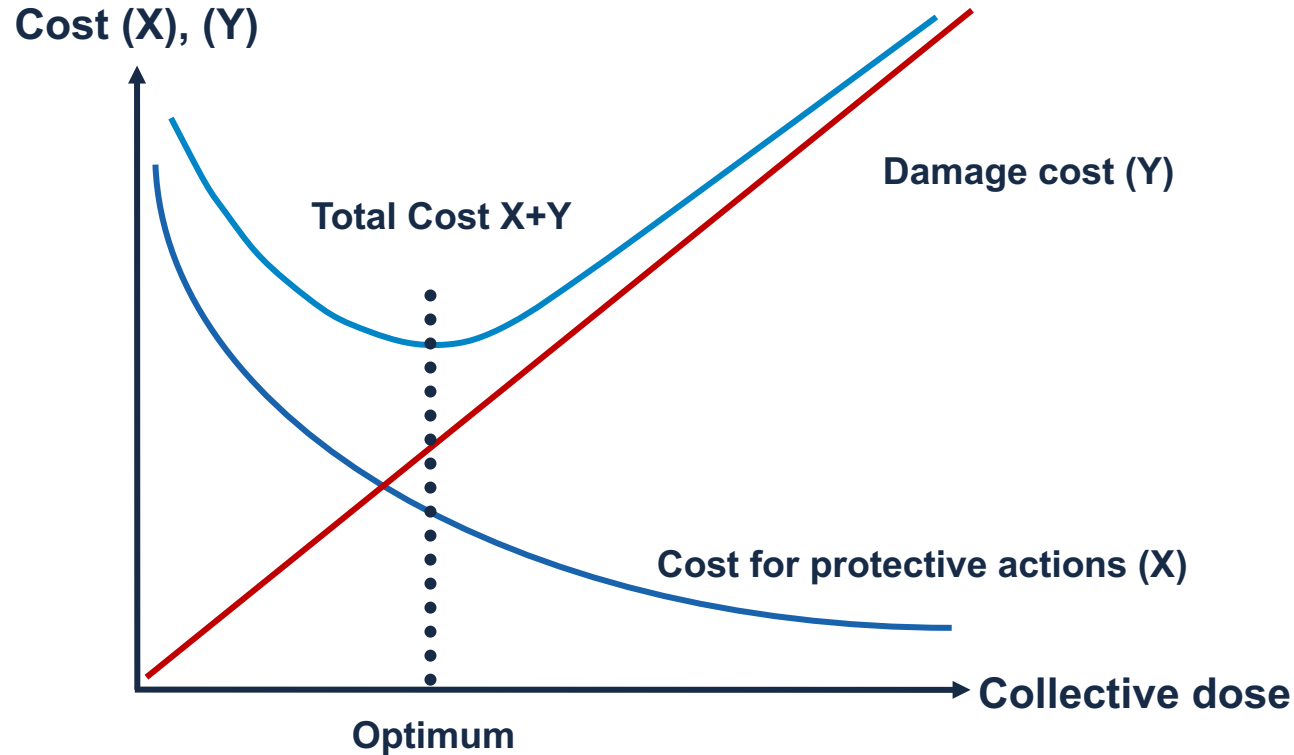


OPTIMIZATION OF RISKS

- Striving towards zero risk?
 - Suboptimal use of resources
 - Risk transfer to other groups
 - Risk transfer to other categories
- Acceptance of risk: ALARA
 - Optimization of risk and resources



COST-BENEFIT ANALYSES



CROSS-CUTTING AREA

- Plant design
- Fuel control
- Cobalt reduction
- Process water chemistry
- Decontamination
- Accessibility
- Operation optimization



ALARA PROGRAM



FLEET ALIGNMENT

- 1+1>2
- Demanding market conditions
- Cooperation through *Functional Areas* and *expert groups*
- Operational experience and international outlook
- Alignment of
 - Regulation interpretation and implementation
 - Procedures
 - Procurement
- Engagement!

