

## Comparison of Provisions for Exclusion and Exemption of NORM radionuclides associated with the North Sea Oil and Gas Industries

A Stackhouse, M Nilsen, C Nielsen

IRPA13 - 14 May 2012





- Brief overview of North Sea and NORM
- Who has undertaken the comparison and why
- On overview of the similarities and differences
- Reason for differences
- Practical implications
- Conclusions for developing legislation in the future





### **North Sea Areas**



Approx 1300 installations in the North Sea

Majority are in UK and Norwegian waters



# North Sea NORM Regulators Working Group

- Members
- UK members, (SEPA, DECC, EA)
- Norwegian Radiation Protection Authority
- National Institute for Radiation Protection (Denmark)
- Federal Office for Radiation Protection, Germany (BfS)
- Purpose
  - Share best practice and information of common interest
  - Harmonise approach as far as possible
  - Consider joint research

### **Solid wastes**

#### Lead-210



**Denmark**: permit is required if Pb-210 > 5 Bq/g No exemptions or restrictions on what may be permitted

#### Radium-226

	0.5	Bq g <sup>-1</sup> 5 Bo	q g <sup>-1</sup> 10 1	3q g <sup>-1</sup>	
UK	Excluded	Exempt if total activity < 50 GBq must be sent to landfill	Exempt (to landfill) if dose assessment demonstrates doses are acceptable	<b>Permit required</b> (no restrictions on type of disposal facility)	UK
Norway	Exclude	d Permit required, Pollution Contr disposal facility ad activi	either from NRPA or ol Agency. Any type of ceptable provided total ty <10 kBq	Waste must be sent to a repository	Norway

1 Bq g<sup>-1</sup>

#### Radium-228

	1 B	q g <sup>-1</sup> 5 B	q g <sup>-1</sup> 10 ]	Bq g <sup>-1</sup> I	
UK	Excluded	Exempt if total activity < 50GBq must be sent to landfill	Exempt (to landfill) if dose assessment demonstrates doses are acceptable	<b>Permit required</b> (no restrictions on type of disposal facility)	UK
Norway	Excluded	Permit required, ei Pollution Control A disposal facility acceptal <100	ther from NRPA or uthority. Any type of le provided total activity kBq	Waste must be sent to a repository	Norway

Denmark: permit is required if Ra-226 > 0.5 Bq/g or if Ra-228 > 1 Bq/g

No exemptions or restrictions on what may be permitted





- Very different approaches
  - UK has bespoke assessments and radionuclide specific values in Bq/I
  - Norway has supplemented concentration values with total activities
  - Denmark has same values as for solids but reporting is mandatory



### **Summary - Reasons for differences**

- Legislation based on different international requirements/guidance
  - EC RP122
  - IAEA RS-G-1.7
  - Basic Safety Standards Exemption values
- Bespoke assessments carried out by some countries
- Practical considerations
  - Industries affected and quantity of waste generated
  - past practice
  - available disposal routes has an influence



### Conclusions

- Close alignment regarding approach to clearance of solids in North Sea area
- However, regulatory requirements on wastes that are subject to regulation quite different
- For a consistent and harmonised approach it is important to work together on international legislation and standards – but this close working needs to continue during implementation into national law
  - Not always easy!



# Thank you for listening