Approaches used for Clearance of Land from **Nuclear Facilities among Several Countries: Evaluation for Regulatory** Input

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Purpose

SSM initiated a comparison of clearance approaches among several countries

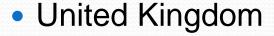
- Use information to develop Swedish regulations and guidance
- Information could be used by industry
 - Understanding the roles of various attributes
 - Planning for the various attributes in advance

Method

- Study site clearance processes in:
 - France



- Germany
- Spain



United States



- Summarize for each country each attribute
- Compare process attributes for each country

Method

Attributes

- Regulatory basis
- Scope
- Applicability
- Flexibility
- Transparency



José Cabrera nuclear power plant

Method

Attributes (continued)

- Roles and responsibilities of parties involved
- Quality program
- Details of measurement description
- Mathematical approaches
- Available assessment tools



(example row: Regulatory basis)

Attribute	France	Germany	Spain	UK	US
Regulatory	No	Order of	No general	By policy,	Multiple,
basis	[residual]	10 μSv/a	dose or	"no	with risks
	activity or	and tables	risk basis	danger"	from 10 ⁻⁶ to
	concentra-	of	found,	law met by	10 ⁻⁴ /a, and
	tion of	concentra-	case-by-	≤10 ⁻⁶ risk	doses
	which	tions	case		ranging
	warrants a				from 150
	radiation-				to 250
	protection				μSv/a plus
	control				ALARA

(example row: Flexibility)

Attribute	France	Germany	Spain	UK	US
Flexibility	Highly flexible, case-by-case	Prescriptive and dosebasis allows flexibility	Highly flexible, case-by-case	Highly flexible, case-by-case	Very highly pre- scriptive in scope; non- binding

(example row: Roles)

Attribute	France	Germany	Spain	UK	US
Roles and	General	Law	Clear	Possible	Guides
responsi-	require-	specifies	roles of	overlap-	user to
bilities of	ments	authori-	authori-	ping	form
parties	including	ties' and	ties;	authori-	quality,
involved	consult	operator's	implement	ties,	planning,
	with	require-	-ers' roles	responsi-	implement-
	relevant	ments;	not found	bilities,	ing,
	parties	roles of		unclear	decision
		other		stakehold	teams;
		stake-		er roles	consulta-
		holders		seem to	tion with
		not found		evolve	stake-
				during	holders,
29 April 2012		SA	ATS	processes	authorities

(example row: Mathematical approaches)

Attribute	France	Germany	Spain	UK	US
Math. approaches	Not found as a specific application	Explicit and detailed	Not found	Not found	Very explicit detailed robust methods, geospatial not covered

Results



Wide-range of approaches in each attribute

- Prescriptive and General
- Specific and objective-based
- Uniform in country or case-by-case

Concluding Remarks

Regulatory climate

- Varies among countries
- More vs. less prescriptive
- More governmental vs. more public processes
- Tolerance for variable outcomes

Tradeoffs

- Regulatory effort vs. inspection effort
- Costs to authority and to facility

Technically defensible processes are published

MARSSIM and EURSSEM are examples

Thank you!