

Society for Risk Analysis 2000

**Do Federal Regulatory Agencies
Use the Best Available Science?
Major Federal Rules in 1998-99**

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Data from *Regulatory Checkbook*, CSAB's Regulatory Oversight

Project

✓ Project Scope

- All major rules from April 1998 – March 2000
- This presentation covers April 1998 – March 1999

✓ *Major rule* defined by law as one having \approx \$100+ million in effects in any one year

✓ Details are left for the devils

- *Best* is characterized in terms of methods, not results
- Risk management choices are not relevant

Assumptions

- ✓ Major rules deserve a high level of analytic effort
- ✓ It's reasonable to expect agencies to comply with statutory and presidential requirements
- ✓ *Risk assessment* is defined broadly
 - *RA*: any analysis of risk beyond mere assertion
 - *QRA*: any RA that yields numeric estimate(s) of risk
- ✓ *Type of risk* means the predominant risk issue
 - financial, health, safety, environmental

Risk and Non-Risk Related Major Rules

Risk Related	36
Non-Risk Related	37
Total	73

Major Rules by Type of Risk

Type of Risk	Total	Risk Assessment	No Risk Assessment
Financial	12	0	12
Health	12	9	3
Safety	4	3	1
Environmental	8	4	4

Major Rules by Type and Source of Risk Assessment Requirement

Type of Risk	Statute & EO		EO Only		Exempt or Forbidden	
	<i>RA</i>	<i>No RA</i>	<i>RA</i>	<i>No RA</i>	<i>RA</i>	<i>No RA</i>
Financial	0	0	0	5	0	7
Health	8	0	1	3	0	0
Safety	3	0	0	0	0	1
Environmental	3	0	1	4	0	0

Major Rules by Type of Risk and Type of Risk Assessment

Type of Risk	None	Qualitative	Quantitative
Financial	12	0	0
Health	3	3	6
Safety	1	0	3
Environmental	4	4	0

Major Rules by Type of Risk Assessment

Type of Risk Assessment	Qual	Quant
Professional Judgment	7	0
Assumptions	0	2
Upper Bounds	0	6
Sensitivity Analysis	0	1

Major Rules by Method for Managing Uncertainty

Method	Number
Point Estimates	6
Range(s)	2
Distribution(s)	1

Do Federal Agencies Use the Best Available Science ? (1)

- ▶ 73 major rule issued April 1998 – March 1999
- ▶ 36 major rules were risk-related
 - 7 exempt, 1 forbidden
 - 12 risk-related rules had no risk assessments
- ▶ 16 were accompanied by risk assessments
 - 0% finance, 75% health, 75% safety, 50% environ
- ▶ Statutory requirements mattered
 - 100% where law requires RA
 - 14% where only Executive order requires RA

Do Federal Agencies Use the Best Available Science ? (2)

- ▶ 63% of RAs were QRAs
- ▶ QRAs generally used limited methods
 - 60% upper-bound methods
 - 20% arbitrary assumptions
 - 20% sensitivity analysis without probability of occurrence
- ▶ QRAs generally ignored uncertainty
 - 6/9 point estimates
 - 2/9 range(s)
 - 1/9 distribution(s)