

RIC 2001
Risk Informed Activities
Session W3

Vision for the future

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Nuclear Regulation History

- Stage 1 - AEC - find beneficial uses, promote them, but do so without harming public health
- Stage 2 - separate promotion from regulation, NRC created
- Stage 3 - After TMI, renewed vigor for regulation

Current

- Stage 4 - Risk Assessment/ Risk Management paradigm
 - human health risk data - assumption of linear no-threshold risk in absence of exact data
 - prioritization of resources based on probabilistic risk as determined by engineering and science
 - knowledge of scientific uncertainty in that decision
 - cost/benefit focus
 - indicators for measuring results

Vision for the Future

- Stage 5 - integration of decision making with values of society
 - realization that people don't make choices based solely on risk
 - Assessment of public values
 - Balance between present and future consequence of decisions
 - Acknowledgement that there are a complex mixture of risks, cumulative impacts, synergism, diverse populations

Questions to be considered

- Of all the risks affecting me, which are most serious?
- Which are we most capable of limiting?
 - Economically
 - Technologically
 - Politically
- How can we measure progress at limiting integrated risk?

More Questions

- How do we...
 - allocate costs and benefits associated with risk across the population?
 - encourage public involvement in risk assessment and risk management?
 - allocate resources and set goals for risk reduction?
 - accommodate competing goals?
- Between...
 - individuals and groups
 - present and future generations

What do we need for entering Stage 5?

- Integrate approaches and use concepts from a broad range of disciplines
 - Engineering
 - Physical and Biological Sciences
 - Social Science
 - Political Science
 - Philosophy
 - Economics

What is the role for scientists and engineers?

- Collecting, analyzing, assessing and presenting data
 - Broad use of indicators to look at both stressor and effect
 - multiple stressors to cause one effect
 - multiple effects of one stressor
- Presenting risk comparisons
- Identifying risk reduction opportunities

What is the role for economists?

- Quantifying costs and benefits for each option
 - compliance costs
 - government administration costs
 - allocating costs and benefits across time (benefits could accrue to present generation, but costs to a future generation)
 - discussing equity concerns if there is an uneven distribution of benefits and costs across individuals and groups in society

What is the role for social scientists?

- Helping people develop considered values
- Eliciting and using public values in decision-making
- Communicating technical information in ways that are helpful to non-expert participants
- Understanding people's choices and preferences

What is the role for decision-makers?

- Using the best science to inform decision-making
- Making decisions despite scientific uncertainty
- Considering
 - economic consequences of various risk management scenarios
 - widely held public values, such as equity and sustainability
 - legal and institutional constraints

Whose role is it to interpret public values?

- Government - regulatory environment
 - infuse public values into regulatory decisions
- Private Sector - deregulated environment
 - voluntarily infuse public values into private sector decisions without the need of government intervention
- Non-profit - community environment
 - volunteers committed to public initiatives