

# Risk Analysis: Always a Help, Never a Panacea

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# Background

- Editor-in-Chief of Risk Analysis
- Been at Rutgers for 37 years
- Focus on environmental health policy
- Interest began in high school when National Environmental Policy Act was passed
- NEPA necessary but not sufficient process

# Risk Assessment

- (1) What can go wrong?
- (2) What are the chances that something with serious consequences will go wrong?
- (3) What are the consequences if something does go wrong?

# Risk Management

- Making choices about which risks are higher priority than others
- Using economics, ethics/morality, public perception, values, and politics to reduce these risks.
- An art and a science

# Alternatives to Risk Analysis

- (1) do nothing
- (2) follow ideology
- (3) follow laws, rules regulations, which can be counterproductive (outright ban, restrictions on equipment and raw materials)

# Chemical weapons: Clear Recommendations

- Destruction of hundreds of thousands of rounds located at 8 sites and Johnston Island
- Congress and international treaty says destroy them and can't cross state boundaries
- What technology(ies)?
- Volume, convenience?
- Do fault-tree analyses to isolate risks

# Risk analysis-based suggestions

- Re-order priorities to minimize handling
- Isolate bad rounds
- Use incineration in some locations, thermal degradation in platinum reactors for others
- No movement of rounds during lightening or severe winds
- Build plant like a submarine
- Add on carbon filter to end of process

# Challenges for Port Security

- Scenario selection: open system, difficult to select plausible yet challenging scenarios
- Probabilities for likelihood: not deliberate vs. terrorist
- Economic impacts: space and time



