Enhancing Credibility of Nuclear Fuel Cycle Policy

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Key Points

- Efforts to site UNF disposal facilities begin with a structural credibility deficit
- Our policy designs and institutional arrangements have interacted to create significant hurdles for siting efforts
  - Inflexibility in policy design has amplified the challenges posed by these hurdles
- Policy designs reflecting broad public concerns can substantially increase prospects for acceptance
- Controversy interacts with changing regulatory phases to complicate the task of maintaining the credibility necessary for successful NFC

The UNF Management Challenge

- Significant public support exists for continued reliance on nuclear energy
  - Does that translate into support for siting storage facilities?
    - Not directly: growing perceived nuclear energy *benefits* drive current support
    - Perceived nuclear risks have held steady
- The challenge for storage/disposal facilities
  - The risks without the benefits
  - The attributes of a generic disposal facility

Federalism and the Governors' Dilemma

- In Federal siting cases, Governors are *by design* the advocates for their residents
  - Within states, benefits are not evenly distributed
    - Tend to be away from population centers (and votes)
  - The public will (quite reasonably) be skeptical at the outset
  - The Congress can change the deal
    - "Dancing with a 900-pound gorilla"
- When boxed into a corner, governors are likely to exercise a veto or refrain from engaging at all
  - Rigidity in *policy design* leaves little room to offer states mechanisms to remedy these problems

Policy Design and SNF Management

- Policies are combinations of attributes
  - Encompasses the benefits and the risks
  - E.g.: the YMP design circa mid-1990s

- Siting Process Design
  - Number of sites
  - Regional distribution
  - Criteria for selection
    - Single optimal site, or
    - Multiple "acceptable" sites?
  - Who gets a say
  - What venues?

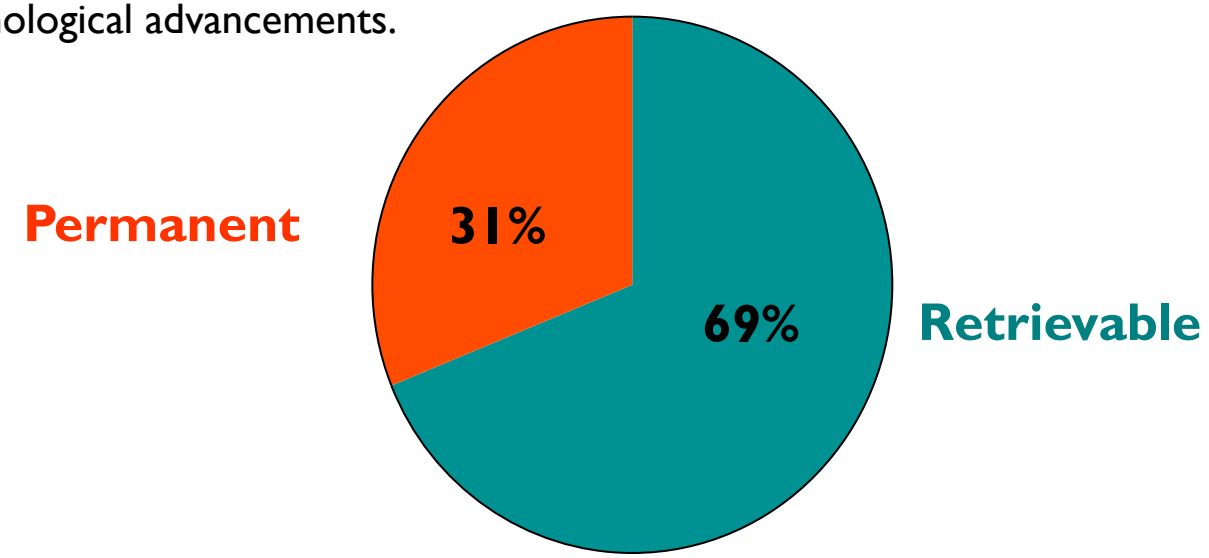
- Facility Design
  - Retrievability
  - Depth
  - Extra-storage attributes
    - Research
    - Future Reprocessing
  - Time and monitoring
    - Closure dates at YMP
    - Time and ethics

Retrievable vs. Permanent

Should design permit authorized personnel to gain access to them and retrieve UNF in the future, or should it permanently block assess to them?

One option: continuous monitoring, retrieval for safety improvement or resource use. This option requires greater security efforts and may be more vulnerable to attack or theft.

Another option: seal off storage sites in such a way that people cannot readily gain access to the materials in the future. This option is more secure, but does not allow reprocessing or treatment by future technological advancements.



Implications of Design Options

Co-locating Research Laboratory with Repository

	2 Mine-Like Geologic Repositories (%)			7 Deep Borehole Repositories (%)		
Initial Preference	Support 58	Neutral 26	Oppose 16	Support 51	Neutral 28	Oppose 21
Support Increased	**70**	**55**	**48**	**72**	**61**	**50**
Support Unchanged	20	37	21	19	33	23
Support Decreased	10	8	31	9	6	26

Co-locating Reprocessing Facility with Repository

	2 Mine-Like Geologic Repositories (%)			7 Deep Borehole Repositories (%)		
Initial Preference	Support 58	Neutral 26	Oppose 16	Support 51	Neutral 28	Oppose 21
Support Increased	**66**	**47**	**48**	**66**	**56**	**50**
Support Unchanged	21	43	16	21	35	25
Support Decreased	13	10	36	12	9	26

Technical Credibility and Risk Debates

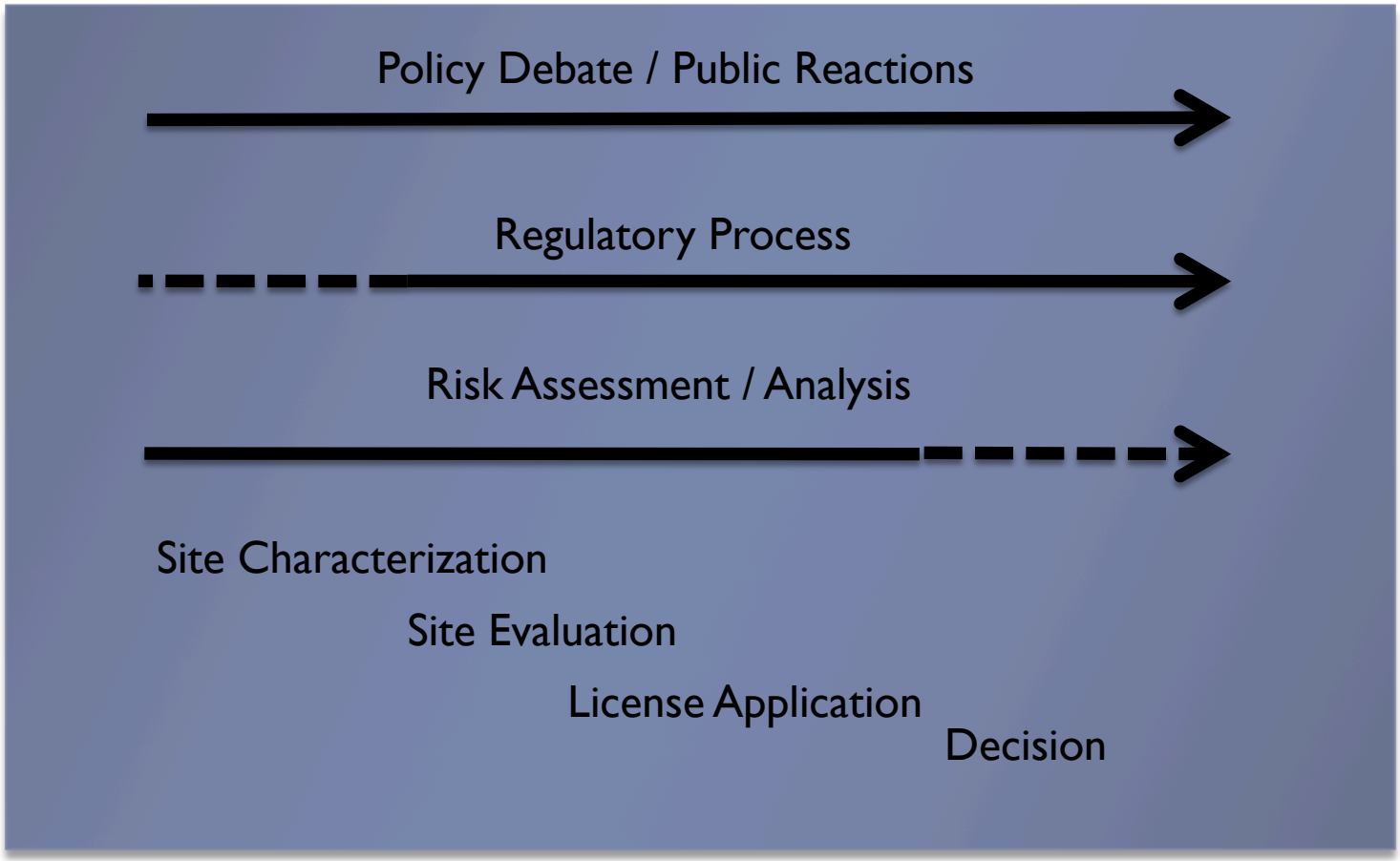
- Scientific and technical communities cannot escape the politicization of risk debates
  - Scientists who speak through organizations perceived to be advocates are perceived as advocates
- The constraints on technical communities change over the course of the siting process

Perceived Institutional Bias

Rate your impressions of how each organization is likely to assess risks

%	Downplay Risks	Accurately Assess Risks	Exaggerate Risks
National Academy of Sciences	19	**57**	24
Nuclear Regulatory Commission	38	**45**	18
Environmental Protection Agency	27	**39**	34
National Laboratories	**47**	33	19
State Regulatory Agencies	**42**	33	25
Nuclear Energy Institute	**55**	31	13
Environmental Groups	15	28	**57**

The Process-Driven Time Dimension



Credibility Implications

- Technical & Regulatory communities in political cross-hairs
  - Perceptions of credibility and chain of command
    - The WIPP and YMP approaches
  - Changing norms; the dilemma of being marooned
    - Defensive posture; drain of expertise
  - Asymmetry in credibility loss/gain
    - Designing robust institutions
- Policy Design and Credibility
  - Unacceptable policies have a corrosive effect on technical credibility

Contact Information

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