

On considering Governance Regimes for National Nuclear Operations.

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I. Introduction.

Gaps in earlier discussions:

** Rad Waste element so far not “Forward looking.” cleave mainly to present scale, and regulatory and confrontational patterns.

- Power Production and Waste Management operations would be much larger, more diverse and densely dispersed Probably twice as large as today’s systems
- Need descriptions of various plausible future systems as they would be **at scale**.

**Public participation/attitudes discussions assumes members of the public can intuit enough of what might be possible that they have a reasonable basis for expressing preferences.

II. Theme: “Governance” i.e., “authoritatively developing, deploying, operating and rescuing widely dispersed systems for the reliable, safe management of very hazardous materials.”

* Special Properties of nuclear systems challenge design of “governance regimes” shepherding materials of very long lasting and varying lethal potential.

- 1) Materials producing power plants, have something like 100 yrs fixed footprints.
- 2) National systems would be a significantly denser, more dispersed transport web of relatively frequent exchanges among producing and repository facilities.
- 3) Expectations that the system would perform effectively for upwards to 100 years above ground and 1000 years below ground.

The institutional (organizational) and governance challenges combine to demand levels of organizational reliability and longevity unique in history and scale.

III. Effects of Properties, in US context, on Confidence in Market as source of discipline.

To what degree might proposed systems produce properties that confound the characteristics associated with effective market performance? (Market as a source of social discipline.)

* Contrast of **Conditions increasing confidence** in market relationships to those characterizing nuclear operations. [Expanded in vugraph]

(NOTE: When technical/operational systems erode market enabling here are increasing demands for regulatory regimes to assure effectiveness.)

IV. Framing the Institutional/Governance Challenges.

Proposals for new designs or existing operating/governance regimes, should be vetted in terms of their capacities to realize the conditions associated with achieving each of the conditions listed below.

Review of the **conditions needed to achieve these outcomes.**
(probably necessary, not sufficient): [Explicated in VuGraphs]ⁱ

- ** **Highly reliable operations** (throughout);
..stress equal value of reliable production and operational safety.
- ** **Steadfastness** in holding past commitments into the far future (**Institutional Constancy**);
- ** Demonstrating that **these institutions are continually worthy of the public's trust and confidence.** (Refer to Gov. Sullivan's letter.)

V. Implications and Challenges:

- Technical design to limit the range of operations that confound market assuring conditions.
- Consider the adequacy of received regulatory regimes to encompass new developments without major changes.
- Better understanding about the incentives that encourage/require contractors and agencies to become continually worth of the public's trust generation after and generation for upward to 25 Presidential terms.... (100 years plus)

Central Question: To what degree would proposals for institutional designs of nuclear production and waste management facilitate achieving these challenges?

VI. Institutional Quandary. The challenge is particularly steep to the degree the attentive public perceives the various operational and institutional leaders in the following pattern.ⁱⁱ

Perceived Characteristics of Various Players

In Federal Technical Operations, EG, Nuclear Stewards

Characteristics

<u>Organiz. Level:</u>	<u>Competent</u>	<u>Accountable</u>	<u>Vulnerable</u>	<u>Affect policy</u>	<u>Reliable</u>
<u>Operations</u> (~10 Yr Gen)	Most skilled	Most	Most	Limited	Quite
<u>Mid+ Mangt</u> (~10 Yr Gen)	Moderate	Moderate	Moderate	Some	Usually
<u>Regulators</u> (~5-7 Yr Gen)	Variable	Limited	Limited	Some	Variable
<u>Appoint Exec.</u> (2-4 Yr Gen)	Modest	Limited	Limited	Moderately	Unreliable
<u>Legis Overseers</u> (4-6 Yr Gen)	Limited	Quite limited	Very Little	Decisively	Unreliable

ⁱSee Appendix for full lists of conditions of Highly Reliable Organizations, Institutional Constancy (IC) and Public Trust and Confidence (PT&C.)]

ⁱⁱ Derived from reviewing/hearing public comments over the past decade.