Transportation of SNF and HLW

NRC Briefing on Management of Low-Level Waste, Spent Nuclear Fuel (SNF), and High-Level Waste (HLW)

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Federal-State Collaboration in SNF/HLW Transportation System Design

- **Strongly recommended by both the National Academies (NAS) in 2006 and the Blue Ribbon Commission (BRC) in 2013.**
- **The DOE Nuclear Fuel Storage and Transportation (NFST) Project has made a special effort to follow-through.**

Review of SNF/HLW Transportation Issues

- **Given current program constraints, an appropriate focus for collaborative SNF transportation planning.**
- **Assembles inputs for "real" transportation system design, when we have destination(s) and a schedule.**
- **Draws on knowledge of experienced state and federal persons still involved.**

Visits to Shutdown Reactor Sites

- By a DOE/NFTS Team, with State representatives included.
- BRC: "First-in-line" for removal.
  NAS: Demo transport of older fuel over short distances.
- Visits very informative, even though no destination(s) or acceptance policy. Understand situations to be encountered, if and when.

Training for Safe-Routine Transp. & Emerg. Response

- Required by NWPA Section 180(c) ..... implementation processes not yet resolved.
- Challenge: Diversity of state-local conditions along (presumably lengthy) transport routes.
- An inter-regional team to work through the issues.
- Using cooperative agreement funding to support travel for face-to-face discussion ..... making progress.

The Limitations of Probabilistic Risk Assessment

- **NRC's Risk Management Regulatory Framework: "An essential factor is an accurate and complete description of the limitations of the methodologies and risk assessment tools used to generate the risk information."**

The Limitations of Probabilistic Risk Assessment cont..

- ***re:*** **Transport of SNF/HLW, limitations of probabilistic risk assessment may include:**

Deep concern about radiological content of material shipped……. concerns about property values, stigma, other indirect effects.

Limited direct stake in corridor communities, with limited legal recourse…potential resentment.

Logistical complexity…….. opportunities for things to go wrong.

Lack of trust in federal program managers, who may expect corridor communities to accept their own definitions of safety.

The Limitations of Probabilistic Risk Assessment: *cont.*

- **Limitations can be worked through….*if*:**
  Taken seriously in program planning; &
  Overall strategy makes a convincing case for amount of transport needed for a particular immediate program purpose.

- **Why not addressed by NAS (2006), BRC (2012), or DOE Strategy (2013)?**

  NRC accepted 1987 amendments;
  Despite broad charter, BRC constrained: not a siting agency.
  Neither addressed the geography of nuclear waste in the U.S.

A More Integrated Waste Management Strategy

- **Transportation (& interim storage) *is* probably needed….e.g. to stop the breach-of contract fiscal drain.**
- **Why consider geography? To provide prospective corridor communities with a cogent answer to the question: "What is the convincing program purpose that makes it necessary to ship this nasty stuff through us now?"**

A More Integrated Waste Management Strategy *cont.*

Possible strategy elements:

- **Seek 3 or 4 consent-based regional storage facilities; consent-based siting active, purposeful & patient.**
- **Host state regulation of interim storage; inter-regional agreements re use;**
- **Early transport like NAS pilot program: "Relatively short, logistically simple movements of older fuel".**

A More Integrated, "No Regrets" Approach cont..

- With transport tailored to immediate program purpose, work through "social risks" with corridor states and communities.

- Further use of regional storage facilities, as agreed…..e.g. Repackaging; Gen IV power

Questions?

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