

# Transportation of SNF and HLW

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



***September 18, 2014***

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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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