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GIMME THREE STEPS: THE CHANGING POLITICAL LANDSCAPE OF HIGH-LEVEL NUCLEAR WASTE DISPOSAL
YUCCA MOUNTAIN’S ROCKY ROAD

- What is the Yucca Mountain Program?
- How has it failed so far?
- Why has it failed so far?
- Why Social Science is critical in understanding what went wrong.
The United States Government plans to ship 77,000 tons of spent nuclear fuel and high-level radioactive waste to a proposed geologic repository at Yucca Mountain, Nevada, between 2017 and 2045.

The problem of nuclear waste storage was recognized in the Atomic Energy Act of 1954.

The problem has not yet been resolved.
WHAT IS SPENT NUCLEAR FUEL AND HIGH LEVEL RADIOACTIVE WASTE?*

- Spent Fuel rods from nuclear power plants
- Weapons production waste products

*Collectively abbreviated here as: HLRW
SPENT NUCLEAR FUEL STORAGE POOL
HLRW IS EXTRAORDINARILY DANGEROUS

- Direct SNF exposure deadly for 50+ years
- Each cask contains enormous amount of dangerous radioactive materials
- Cask breach in worst-case accident: 5-4,000+ latent cancer fatalities (LCFs) and $300,000-$10 billion+ cleanup costs
- Cask breach in successful terrorist attack: 48-1,800+ LCFs and $10 billion+ cleanup costs
## Radiological Characteristics of Spent Nuclear Fuel

<table>
<thead>
<tr>
<th>SNF Age (Years)</th>
<th>Activity (Curies)</th>
<th>Surface Dose Rate (Rem/Hr)</th>
<th>Lethal Exposure (Time)</th>
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<td>100,000</td>
<td>8,640</td>
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The waste emits radiation during transit
Moving the waste to Yucca Mountain will last between 24 and 48 years
Between 10 and 13 million people will be exposed to radiation due to the transportation of the nuclear waste
The Department of Energy has failed to develop a viable transportation system or provide rail access to Yucca Mt.
PAST AND FUTURE SHIPMENTS COMPARED

- Shipments 1997: 3,638
- 1963-Proposed Action: 53,900
- Additional Modules: 108,000

Past Shipments
FOR NEVADA LOW DOSES OF RADIATION WILL BE SIGNIFICANT AND CONTINUOUS

Between 40-80,000 people live within the rail radiation exposure zone in Clark County.

74 hotels, 49,000 hotel rooms lie within the exposure zone.

Dept. of Energy estimates $10 billion to clean up a maximum accident in an urban area.
CURRENT STATUS

- $11 Billion spent
- No repository
- No casks
- No transportation system
- Possibly no license this year
- We can’t say we didn’t see it coming
The purpose of the report was to provide information to support programmatic approaches to the disposal of high-level and transuranic waste.

Relevant major findings of the IRG:

1) Increasing the breadth, redundancy and diversity of the program increases the chances of success.
2) No major health or safety consequences associated with delaying the opening of the repository.
3) Strategies which look at a multiplicity of sites and geologic environments will more adequately address public concerns than those which consider only a few locations.
THE NEED TO DO SOMETHING RESULTED IN NWPA

- Passed in 1982, innovative legislation
- Elaborate decision making process
- State input into the site selection process
- Multiple sites
- But...
The requirement for the AMFM report was inserted into the Act to placate environmental and certain industry interests that wanted the repository program to be separated from DOE, fearing that DOE was too political to be able to implement the program.

“Managing Nuclear Waste: A Better Idea”

To succeed, it requires both a technically defensible site proposal and a clear procedural record of responsiveness to states, tribes, and other groups.

The fundamental recommendation of AMFM panel was that of all the ways in which the nation’s HLRW disposal programs could be organized, the best would be to establish a dedicated, federally chartered corporation.
First, it directed DOE to characterize only one site—Yucca Mountain, Nevada. Second, it specifically prohibited examination of nuclear disposal in crystalline rock (NWPAA citation). Politically motivated outcome.
Political Influence in 1987 (100th Congress)

- NWPAA (“Screw Nevada” Bill) enacted Dec. 22, 1987
- Five States originally considered for First Repository (MS, NV, TX, UT, WA)
- Four States that “got off the hook” represented by powerful congressional leaders
- NV lacked powerful voice in Congress
NIMBY Leaders in Congress 1987

- MS: Sen. Speaker Protemp John Stennis (1947) & House Minority Whip Trent Lott
- TX: Sen. Lloyd Bentsen (1971) & Speaker of the House Jim Wright
- WA: House Majority Leader Tom Foley & Senator Brock Adams (1986) (former congressman, cabinet member)
THREE STEPS

- Just as Nevada was identified as the sole site for a repository through a political process.
- Changing political landscape coupled with delays are relevant in assessing the future prospects for the project.
- Develop measures of political influence and document their change.
1. PEOPLE

- In 1982, Nevada had only 800,000 residents concentrated mainly in Las Vegas and Reno.
- In 2008, Nevada has nearly 3 million people. Viewed another way, Nevada had approximately .2% percent of the nation’s population and one member in the House of Representatives in 1982.
- The Nevada State demographer estimates that the state’s population will rise to 1.2% in 2020.
- In the 2010 redistricting, Nevada will gain between 1 and 3 seats in the House of Representatives. By the 2020 redistricting (about the earliest Yucca Mountain can open) it may have a total of 6 seats in the House of Represe...
By every measure of economic activity Nevada has become more influential-SanLosVegas

According to opensecrets.org, with less than 1% of the nation’s population, Nevada spent more than 26 other states in the last election cycle-over $15 million (Opensecret.org, 2008)

On a per capita basis, Nevada was outspent by only two other states-Maryland and Virginia
3. POLITICAL INFLUENCE

- Trickier to quantify
- Nevada’s congressional delegation in 1986: 2 representatives; in 2008: 4 representatives
- Committee Assignments:
NV Congressional Representation in 1987

- One Term Sen. Chic Hecht (R) (1982)
- First Year Sen. Harry Reid (D) (1986)
- Powerful WI Sen. William Proxmire reportedly said in 1987: “That Harry Reid is such a nice young man. Isn’t there something we can do for him?”
NV Power in U.S. Senate, 2008

- Sen. John Ensign, Chairman of the National Republican Senatorial Committee for 2008 Elections, Member of Finance, Budget, & Commerce Committees (Senate Seniority – 65)
- California Senators Oppose Yucca Mtn.
Yucca Mountain has been a rare political issue in Nevada in that it has engendered bipartisan opposition since it became clear that the siting process would not be driven primarily by

As Nevada’s population has grown, the new immigrants have adopted opposition to Yucca Mountain as a stable part of public attitudes.
WHAT WENT WRONG?

- Lack of executive branch oversight
- Forced siting
- Refusal to accept a “political process”
- High-risk project design
CONCLUSION

- The nation’s nuclear waste disposal program has failed to reach its objectives after 20 years and $11 billion
- The DOE, the implementing agency got what it wanted—a politicized process—but it did not get the politics it wanted
- The political landscape on which the project was built has changed in unforeseen ways that may make it impossible to implement