Public Participation and Access to Justice in Environmental Matters

Nevada’s Successful Opposition to the Yucca Mountain Nuclear Repository

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Outline of Presentation

• Need for a Nuclear Repository
• Congressional mandate: Nuclear Waste Policy Act, including Nevada’s Funded Participation
• Characteristics and Risks of Yucca Mountain
• Nevada’s Successful Litigation Against EPA
• Congressional Response
• Summary: Successful Intervention (Judicial, Presidential and Senatorial)
Generated Nuclear Waste, 1986
Current Waste Storage Sites

Sites storing spent nuclear fuel, high-level radioactive waste.
Nuclear Waste Legislation

- 1982 Nuclear Waste Policy Act (NWPA):
  - Requires a geological repository
  - DOE to develop and operate repository
  - NRC to evaluate and approve repository
  - EPA to promulgate radiation safety standards
  - Three candidate states (NV, TX, WA)
  - Authorizes State veto and Congressional override
Nuclear Waste Legislation (II)

• 1982 Energy Policy Act (EnPA)
  – EPA to establish radiation safety standards
  – EPA to consult with National Academy of Sciences (NAS) and adopt standards “based upon and consistent” with NAS recommendations

• 1987 NWPA Amendments
  – Yucca Mountain, NV the only site
  – Financial assistance to Nevada to review and participate in Yucca Mountain evaluation
NAS and EPA Response to these Congressional Mandates

NAS found “no scientific basis for limiting the time period [for compliance] ... to 10,000 years or any other value”

NAS recommended compliance at the time of greatest radiation dose, which increases exponentially after 11,000 years

EPA nonetheless established 10,000 year standard
Location of Yucca Mountain
Yucca Mountain
Looking Southwest towards Big Dune
Looking West towards Crater Flat

Surrounding Geography (II)
Schematic Diagram of the Finished Repository
Repository (vertical section)
Tunnel boring machine cutter head
Inside Yucca Mountain Exploratory Tunnel
Spent Nuclear Fuel Assembly Mock-up at ESF
(Proposed TAD waste package would contain 21 assemblies)
Contentions Challenge Site Suitability
Contentions Challenge Disposal Concept
Titanium Drip Shields
Contentions
Challenge
Groundwater
Impacts

Figure 2-5, Groundwater
Flow
Contamination
Pump
Pump
Analysis

Death Valley Regional Groundwater Flow System Model Boundary
NNSS Boundary
Populated Area
River Channels
State Boundary
County Boundary
Subregion Boundary
Groundwater Flow Paths for Contaminants for the No-Pumping Analysis Case
Groundwater Flow Paths for Contaminants for the Pumping Analysis Case
Regional Springs
Contentions Challenge Rail Access
Contentions Challenge
Las Vegas Impacts

Located in Las Vegas within 0.5 mile (800 m) of UPRR Route to Caliente:
- 95,000 Residents
- 34 Hotels, 49,000 Hotel Rooms
- 40,000 Visitors & Workers

Located in Las Vegas within 0.5 mile (800 m) of Truck Routes to Yucca Mountain:
- 113,000 Residents

1-2 Trucks per Week through Metro Las Vegas

- EPA promulgates radiation standards, including 10,000 year period for compliance
- Secretary of Energy (DOE) finds Yucca suitable, relying on EPA 10,000 year standard
- President accepts DOE and recommends site to Congress
- Nevada submits notice of disapproval
- Congress rejects Nevada and approves Yucca
State of Nevada v. EPA [I]
373 F.3d 1251 (D.C. Cir. 2004)

• Nevada’s contentions:
  – The EPA compliance standard violates the Energy Policy Act as inconsistent with the National Academy
  – EPA arbitrarily shaped the area where compliance necessary, to dilute the contamination where groundwater would be measured
  – NRC cannot rely on EPA’s standard
  – Congress cannot constitutionally dictate land use against a state’s wishes
  – DOE and the President relied on an inadequate environmental impact statement (EIS)
State of Nevada v. EPA [II]
373 F.3d 1251 (D.C. Cir. 2004)

• The Circuit Court’s ruling:
  – EPA 10,000-year rule violates Energy Policy Act
  – NRC cannot rely on EPA’s regulation
  – Congress can dictate local land use against states
  – EIS sufficiency is not yet ripe for review
  – Therefore, EPA and NRC regulations are vacated, requiring revision before Yucca can proceed
Sequel to Court of Appeals’ Ruling (I)

• 2003: DOE studies revealed, indicating presence of chlorine 36 ($\text{Cl}_{36}$) infiltration
• 2005: Evidence of USGS data falsification
• 2006: DOE decides to pursue licensing
• 2006: Sen Reid ascends to Majority Leader
• 2008: EPA adopts new standards
  – One million years
  – Higher dosage (350 mrem/year vs. 15 mrem/year)
• 2008: DOE submits license application to NRC
Sequel to Court of Appeals’ Ruling (Ⅱ)

• 2008: President Obama elected
• 2009: DOE will “no longer pursue” Yucca
• 2010: DOE withdraws NRC application
• 2010: SC, WA, and Aiken County file challenge to withdrawal in D.C. Circuit Court of Appeals
• 2011: DOE ends funding requests for Yucca
• 2013: Court of Appeals orders NRC to restart licensing with available funds
Pending Yucca Proceedings

• Nevada’s challenge in D.C. Circuit to 2008 revised EPA radiation standards
• Nevada’s challenge in DC. Circuit to NRC implementation of EPA standards
• DOE’s application in NRC for license
  – Hundreds of contentions
  – NRC licensing cost estimate $330 million
  – Nevada cost estimate $8-10 million/year for 4-5 years

No participation funding for NV yet authorized
U.S. Constitutional Law Detour
(American federalism in action: 2000, 2008, next week)

• We elect our President by states’ “electoral votes” in the Electoral College: each state’s vote equals Senators plus Representatives (next slide)

• “Swing states,” such as Nevada which can favor either major party, play an outsized role (Florida and Nevada in 2000)

• Learning from Gore’s loss in 2000, Obama desired to secure Nevada in 2008
Why the Distorted Electoral College Matters

<table>
<thead>
<tr>
<th></th>
<th>2000 Results</th>
<th>2008 Results</th>
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<tbody>
<tr>
<td></td>
<td>Bush (R)</td>
<td>Gore (D)</td>
</tr>
<tr>
<td>Popular Vote</td>
<td>50,456,062</td>
<td>50,996,582</td>
</tr>
<tr>
<td>Electoral Vote</td>
<td>271</td>
<td>266</td>
</tr>
</tbody>
</table>

1. Had Nevada’s four 2000 electoral votes gone to Gore, he would have won 270-267
2. A presidential voter in our least populous state, WY (586,000) has four times the electoral power as one in our most populous, CA (39,000,000)
3. The 1787 Constitutional Compromise in composition of the Senate and Electoral College creates disproportionate anxiety in the 2016 election next week
Conclusion

• Nevada defeated Yucca Mountain because:
  – Funding to conduct research and advocacy
  – Court of Appeals’ independence
  – Ascension of Senate Majority Leader Harry Reid
  – Election of President Obama
  – (Future outcome depends on Presidential and Nevada Senatorial Election, November 2016)

Adaptable to the prefectures of Japan?