Yucca Mountain Licensing Proceeding

Marta Adams
Adams Natural Resources Consulting Services, LLC
Sierra Nevada Forum
October 10, 2017
Carson City, Nevada

adamsnaturalresourcesllc@gmail.com
Walkway to Rail Stop
There is No Repository at Yucca Mountain
(Only 5 mile exploratory tunnel currently)

Proposed Yucca Mountain Subsurface Layout

- Panel numbers represent the proposed construction and emplacement sequence
- Sequence:
  - 6 drifts in Panel 1
  - 27 drifts in Panel 2
  - 45 drifts in 3E & 3W
  - 30 drifts in Panel 4
- Total emplacement length available is approximately 41 miles (66 km)
  - Existing 5 mile exploratory tunnel
Proposed Land Withdrawal Area

Legend:
- Yucca Mountain
- Analyzed land withdrawal area
- Road
- U.S. highway
- State highway
- State line
- County line
- Boundary of federal property unit

Source: Modified from Yucca Mountain FEIS.
Groundwater Flow System
Earthquakes

Nevada earthquakes, 1850s to 1998

- 7.0 or greater
- 6.0 to 6.9
- 5.0 to 5.9
- 4.0 to 4.9
- Less than 4.0

Crater Flat from Crest of Yucca Mountain
Past Volcanic Activity
AFTER 1987, THE APPROACH BY DOE CHANGED FROM “IS YUCCA A SAFE AND SUITABLE SITE?” TO “HOW DO WE MAKE IT WORK IN SPITE OF THE FACT THAT IT IS A BAD SITE?”
But: Yucca Mountain is a BAD site!

- Oxidizing environment
- Fast groundwater pathways
- High earthquake activity
- Young volcanic activity
- Ground stretching
- Aircraft accidents
- No rail access
- Distance from storage locations
NRC Licensing Proceeding 2008 - 2017

- DOE application submitted 2008
- NRC proceeding suspended 2011
- No new funds FY 2012 - 2016
- Court-ordered restart 2013
- NRC ordered partial restart 2013
- NRC staff Safety Evaluation Report 2015
- NRC staff EIS Supplement on Groundwater Impacts 2016
- NRC staff LSN documents to ADAMS 2017
Legally Mandated Licensing Proceeding Could Resume in 2018

- Discovery and trial-like hearings (5 years)
- 299 contentions currently pending
- Nevada would adjudicate 218 contentions
- Nevada would submit 30-50 new contentions
- DOE estimated cost $1.66 billion
- NRC estimated cost $330 million
- Nevada estimated cost $40-50 million
Overview: NRC Licensing Process

- DOE – submit application for construction authorization
- NRC staff – support accepted application
- Intervenors – oppose or support application
- Licensing Board(s) – grant or deny authorization
- The 5-Member Commission – sustain or overturn licensing board decision (final agency action)
- U.S. Court of Appeals for the District of Columbia Circuit - judicial review
Nevada’s Case Against DOE

- Post-closure Safety (One million years): Site is unsuitable and repository design fails to correct deficiencies
- Pre-closure Safety (300 years): Surface facilities are vulnerable to human events and natural disasters
- Transportation impacts (50-100 years) in Las Vegas and rural Nevada are unacceptable
- DOE Final Supplemental EIS fails to comply with the National Environmental Policy Act (NEPA)
Key Nevada Contentions

- Future climate;
- Water flow models;
- Installation of drip shields;
- Chemical composition of infiltrating water;
- Corrosion & failure of drip shields & waste packages;
- Sorption of radionuclides to minerals;
- Behavior of radionuclides in the biosphere;
- Military aircraft crashes into surface facilities;
- Future volcanic events; &
- Transportation risks
Business Case Against Yucca Mountain

• Obtaining a license could cost $2 Billion
• Constructing and operating a repository could cost $80+ Billion (on top of $15 billion spent)
• Terminating Yucca Mountain and developing another site could save $12-27 Billion
Blue Ribbon Commission (BRC) on America’s Nuclear Future

- Bipartisan report 2012
- Nation’s nuclear waste disposal program is broken
- Use consent-based siting
- Develop interim storage facilities
- Replace DOE with federal-chartered corporation
- Adopt NAS 2006 transportation recommendations
- Follow WIPP model (DOE-New Mexico consultation)
Litigation: Pending Cases

1. Nevada v. EPA—U.S. Court of Appeals for the District of Columbia Circuit (DC Circuit)—Challenge to EPA’s public health and safety standard

2. Nevada v. NRC—DC Circuit—Challenge to NRC’s licensing rule

3. Nevada v. DOE—9th Circuit—Challenge to DOE’s designation of Caliente rail corridor

4. United States v. Nevada—US District Court (Las Vegas)—DOE’s challenge to State Engineer’s denial of water rights to construct and operate repository

5. Texas v. DOE and NRC—5th Circuit—Texas challenge to DOE’s and NRC’s administrative actions. Nevada intervened.