Update on Yucca Mountain and State of Nevada Activities

Background Information for
City of Las Vegas
City Council Meeting
Las Vegas, Nevada
December 19, 2012

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Office of the Governor
Nevada Agency for Nuclear Projects
Overview

- Status of Yucca Mountain Repository Project
- Blue Ribbon Commission Final Report
- Safety Case Against Yucca Mountain
- Business Case Against Yucca Mountain
- Yucca Mountain Licensing and Litigation
- Alternative Uses for Yucca Mountain
- DOE Draft Site-Wide EIS for the Nevada National Security Site (NNSS) (DOE/EIS-0426D)
Yucca Mountain Status

- DOE – Project terminated, moved to withdraw license application, no FY 2013 funding request
- NRC – Licensing proceeding suspended
- Congress – Zero appropriation for FY 2012, & for first half of FY 2013 (continuing resolution)
- US Court of Appeals could require NRC to resume licensing proceeding and meet new deadlines
- State of Nevada – Continues to oppose development of geologic repository, interim storage and/or reprocessing at Yucca Mountain
Bipartisan Blue Ribbon Commission on America’s Nuclear Future

- Final Report January 2012 reflects broad consensus view that the nation’s nuclear waste disposal system is broken
- Use Consent-based siting process for facilities
- Replace DOE with federal-chartered corporation
- Improve transportation safety and security
- Follow WIPP model for facility siting, state regulation, & transportation planning
- DOE Implementation Strategy expected January 2013
- Congressional legislation likely in 2013
Safety Case Against Yucca Mountain

• Spent nuclear fuel is dangerous
• The site is unsuitable
• The repository design is flawed
• Transportation impacts are unacceptable
Spent Nuclear Fuel is Dangerous

Fresh fuel is not dangerous

Spent fuel is lethal for decades

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<th>Fuel Cooling Time (years)</th>
<th>Unshielded Lethal Exposure Time</th>
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Storage Risks: Lessons of Fukushima Daiichi
Transportation Accident/Sabotage Cleanup Costs: $10 Billion or more in urban area (DOE, State of Nevada)
Unsuitable Site
Flawed Disposal Concept
Unacceptable Transportation Impacts

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

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

Rail Casks through Las Vegas to Yucca Mountain via Caliente:
Minimum – 8%  Maximum – 79%
4 - 110 trainloads per year
In Clark County, 220,225 residents (about 11 percent of the total county population) live within the ROI for incident-free rail and truck transportation, within 0.5 miles of a rail or truck route to Yucca Mountain.
Las Vegas Rail ROI – New Google Earth Analysis
NRC Licensing Proceeding

• DOE Submits Application – June 3, 2008
• CABs 01,02,03 Memo & Order Admitting Parties and Contentions – May 11, 2009
• ASLB/CAB 04 Established – June 11, 2009
• Case Management Order #3 – Feb. 1, 2010
• DOE Motion to Withdraw – March 3, 2010
• ASLB Order Denying Withdrawal and Admitting Interveners – June 29, 2010
• NRC Memo & Order (Commissioners split 2-2 on Motion to Withdraw) – Sept. 9, 2011
• Proceeding Suspended – Sept. 30, 2011
Licensing Litigation Status

• US Court of Appeals could require NRC to resume licensing proceeding and meet new deadlines
• Petition for Writ of Mandamus (Agency Action Unreasonably Withheld) – Filed December 5, 2011
• Petitioners include Aiken County, SC; 3 individuals; the States of SC & WA; NARUC; & Nye County, NV
• Seeks Court order directing NRC resume consideration of the license application within 30 days, and approve or disapprove the application within 14 months
• Briefs filed Feb. 2012; Oral Argument May 2, 2012
• Order holding case in abeyance, August 3 2012
• Order extending report period, December 12, 2012
• Decision expected January 2013
Implications of Licensing Restart

- Congress has appropriated NRC and DOE no new funds for licensing activities
- NRC & DOE have very limited carry-over funds if licensing should resume
- If licensing resumes, Nevada believes the proceeding will require 4-5 years.
- Nevada plans to pursue all 219 admitted contentions (challenges to the application)
Business Case Against Yucca Mountain

- What currently exists at Yucca Mountain is an exploratory tunnel, not a repository.
- Obtaining a license to construct a repository at Yucca Mountain would be difficult, time-consuming, costly, and cannot be assumed to succeed.
- Constructing and operating a repository at Yucca Mountain could cost $90-100 Billion (2007$).
- Terminating Yucca Mountain and developing another site could save $13-28 Billion (2007$).
Preliminary Estimate of Savings

Potential Cost Savings from Terminating Yucca Mountain for Another Site (Billions of 2007$)

- Reduce/eliminate railroad construction $2-3 B
- Eliminate titanium drip shields $8-10 B
- Reduce national transportation costs $3-6 B
- Use larger, cooler TAD canisters $4-9 B
What Exists Today at Yucca Mountain

Except for the 5 mile exploratory tunnel constructed to gain access to the mountain’s interior for characterization, none of the required subsurface infrastructure exists.
Yucca Mountain Site
Unsuitable for Reprocessing

• No Rail Access – Reprocessing facility would require about 2,900 truck shipments per year, using routes through Las Vegas metro area

• Inadequate Water Resources – Reprocessing facility would require 1,000 acre/feet per year or more

• Seismic Hazards to Surface Facilities – Based on 2008 USGS maps, site is located in a moderate to high ground acceleration area; within 10 miles of the Little Skull Mountain (5.6 magnitude) earthquake epicenter; and 10 – 30 miles from 3 active faults with potential earthquake magnitude of 6.5-7.9
Yucca Mountain Site
GAO 2011 Report on Alternative Uses

• GAO-11-847 survey of federal agency reports & expert opinion considered 5 user categories:
  o Nuclear or Radiological
  o Defense and Homeland Security
  o Information Technology
  o Energy Development or Storage
  o Scientific Research

• No recommendations about preferred use or best alternative use

• Challenges include continued uncertainty about repository, mining claims, divided federal agency control, security concerns, and regulatory approvals

• Accepts DOE licensing application assertion “area of low seismicity and earthquake potential.” [p.13]
DOE Draft Site-Wide EIS for NNSS
DOE Site-Wide EIS for NNSS
DOE/EIS-0426D

- EIS must evaluate past, present, future & cumulative impacts of DOE activities at NNSS and off-site
- Draft EIS issued July 2011 (more than 1,400 pages)
- Comments submitted by individuals, organizations, cities, and counties, including Clark County and City of Las Vegas, and State of Nevada in December 2011
- State & local meeting with DOE in November 2012
- Final EIS and Record of Decision expected in January-March 2013
Major Issues

- LLW and MLLW disposal
- Land use & groundwater impacts
- Economic development
- Socioeconomic & Transportation impacts
- Potential waste shipments through Las Vegas
- Potential future waste shipments from West Valley (reprocessing wastes) and Oak Ridge (Uranium 233)
“Unconstrained” Route through Las Vegas: Spaghetti Bowl

Facilities and Population within 800 meters of the Potential DOE Truck Route (I15/US95 through the Spaghetti Bowl) in Urban Clark County

Facilities within 800 meters of Interstate 15/US 95 through urban Clark County:
- 48 Hotels
- 27 Schools
- 2 Communication facilities
- 2 Hazardous materials facilities
- 2 Floodwater control facilities
- 1 Electrical facilities

2010 Census population within 1/2 mile of Interstate 15/US 95: 119,764

Clark County: Local Conditions

• “In general, over 550,000 Clark County residents are located within the 1 kilometer radius of each of these highways combined. This does not take into account the thousands of transient workers and up to 250,000 visitors who stay on the world famous Las Vegas Strip and downtown Las Vegas each day. The unevaluated and unidentified impact on this region in the SWEIS document is a major deficiency under NEPA, and further highlights the failure of the SWEIS to analyze major impacts to specific local conditions, including population density, land use conflicts, and existing conditions and maintenance of transportation and utility corridors.”