



# Yucca Mountain Update and Transportation Impacts

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U.S. Conference of Mayors Winter Meeting

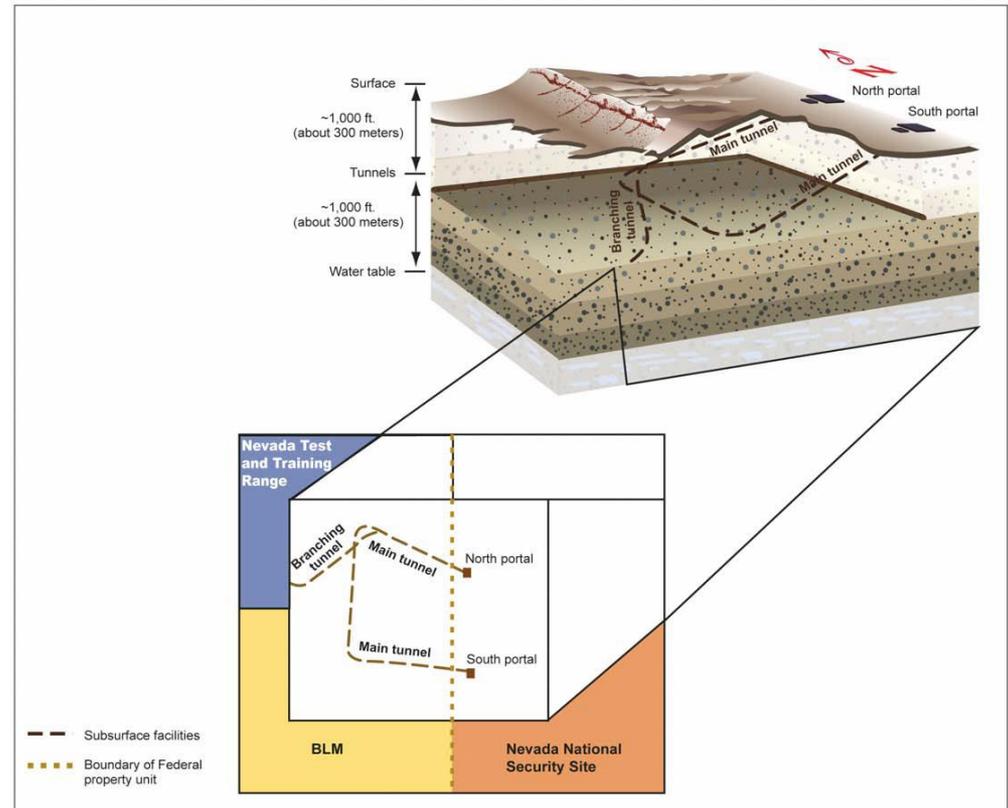
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Visit our website: <http://www.state.nv.us/nucwaste/>

# What Exists Today at Yucca Mountain Cannot be used for Waste Storage or Disposal

- 5-Mile Exploratory Tunnel
- No waste disposal tunnels (Over 40 miles needed)
- No waste handling facilities
- No state water permit
- No construction authorization
- No railroad
- Expired BLM land withdrawal



Sources: GAO analysis of GAO and DOE data.

# Nevada Opposition: Stronger than Ever

- Governor Brian Sandoval
- Commission on Nuclear Projects
- Attorney General Adam Paul Laxalt
- Secretary of State Barbara Cegavske
- Congressional Delegation (5 of 6)
- Mayor of Las Vegas, Las Vegas City Council, Clark County Commission
- Majority and Minority Leaders of the Legislature
- AJR 10 Resolution of Opposition: Assembly 32-6-4; Senate 19-2
- Nevada Opinion Polls (2010, 2017): Oppose – 58%; Favor – 33%

# Recent Developments

- President's FY 2018 Budget Blueprint: Requested \$120 million for DOE and \$30 million for NRC to restart Yucca Mountain licensing activities and initiate a "robust" interim storage program. (March 2017)
- Energy Secretary Rick Perry Visit to Yucca Mountain (March 2017)
- Energy Secretary Rick Perry Meeting with Gov. Sandoval (March 2017)
- Lawsuit filed by State of Texas seeking expedited NRC licensing and other measures (State of Nevada Petition to Intervene April 2017)
- DOE and NRC Budget Request Details Released (May 2017)
- U.S. House of Representatives, Committee on Energy and Commerce, Reported H.R. 3053 Nuclear Waste Policy Amendments Act of 2017 (June 2017); Floor vote expected in January 2018
- Continuing Resolution for FY 2018 through January 19, 2018 provided no new funding for Yucca Mountain Licensing
- Licensing proceeding could resume in 2018 (cost \$2 billion, 3-5 years)

# DOE Proposed Yucca Mountain Transportation System (2008 FSEIS)

- Ship 9,495 rail casks (2,800 trains) & 2,650 truck casks over 50 years [p.6-8]
- If No 2<sup>nd</sup> Repository: 21,909 rail casks (about 6,700 trains) & 5,025 truck casks [p.8-41]
- Average 1-3 trains & 1-2 trucks per week
- Every day, for 50 years, one or more loaded casks on rail or road, from 76 shipping sites
- Cities would be heavily impacted by shipments
- Urban infrastructure impacts must be assessed

# DOE 2008 Representative Transportation Routes to Yucca Mountain



- Selected Affected Cities
- ▲ Yucca Mt
- DOE Major Sites
- Nuclear Power Plants
- ◻ Closed Nuclear Power Plant
- ◻ Operating Nuclear Power Plant
- FSEIS Heavy Haul Route
- FSEIS Rail Route
- FSEIS Truck Route
- States Traversed by Shipments

This map shows the routes evaluated by the U.S. Department of Energy (DOE) in the 2008 Final Supplemental Environmental Impact Statement for Yucca Mountain (DOE/EIS-0250-F), Appendix G, Section G.10.

# Transportation Radiological Impacts

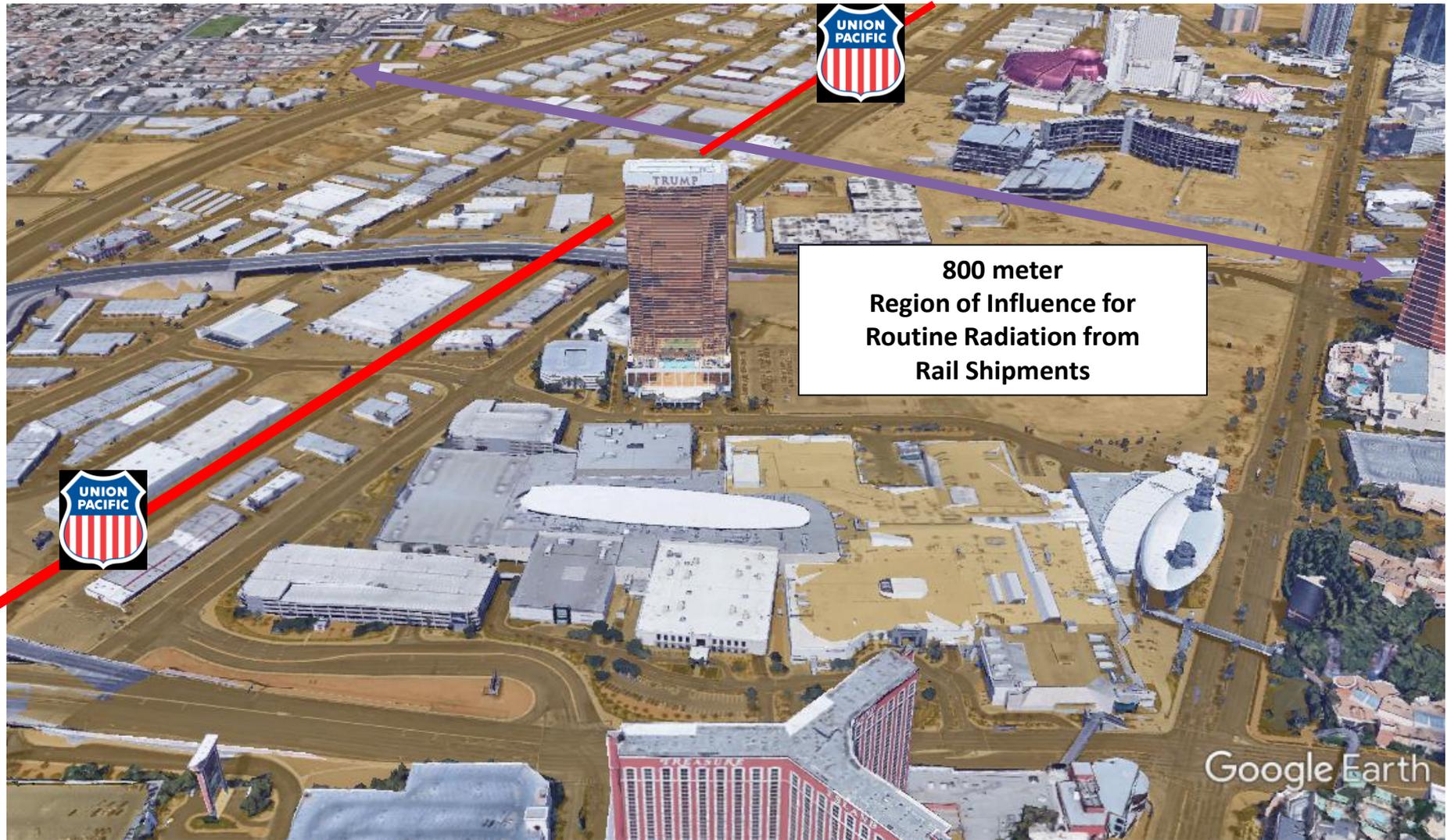
- **incident-free exposures to members of the public residing near or traveling on transportation routes** (up to 0.016 rem to a person in a gridlock traffic jam); [Pp.6-20, 6-21, 8-41]
- **incident-free exposures to transportation workers** such as escorts, truck drivers, & inspectors (by administrative controls, DOE would limit individual doses to 0.5 rem per year; the allowable occupational dose is 5 rem per year); [Pp.6-21, 8-41]
- **release of radioactive material as a result of the maximum reasonably foreseeable transportation accident** (probability about 5 in one million per year), involving a fully engulfing fire, 34 rem dose to the maximally exposed individual, 16,000 person-rem population dose and 9.4 latent cancer fatalities in an urban area, and cleanup-costs of \$300,000 to \$10 billion; [Pp.6-15, 6-24, G-56]
- **release of radioactive material following a successful act of sabotage or terrorism**, using a high-energy density device, resulting in 27-43 rem dose to the maximally exposed individual, 32,000-47,000 person-rem population dose and 19-28 latent cancer fatalities in an urban area, and cleanup costs similar to a severe transportation accident. [Pp.6-27, CR-467]

Source: Halstead and Dilger, ANS IHLRWMC 2011, Albuquerque, NM, April 10-14, 2011, Pp. 410-411.

# Yucca Mountain Transportation Impacts: Las Vegas



# Yucca Mountain Transportation Impacts: Las Vegas



# Shipping Cask Vulnerability in Severe Accident Fires – Ongoing Debate

**MacArthur Maze - 2007**

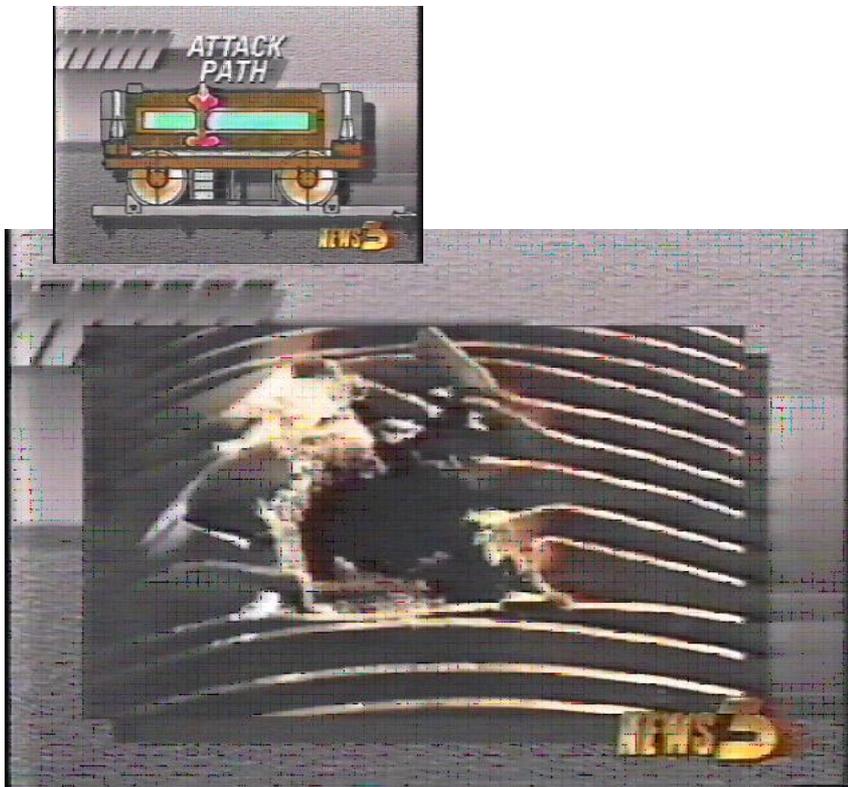


**Baltimore Rail Tunnel - 2001**

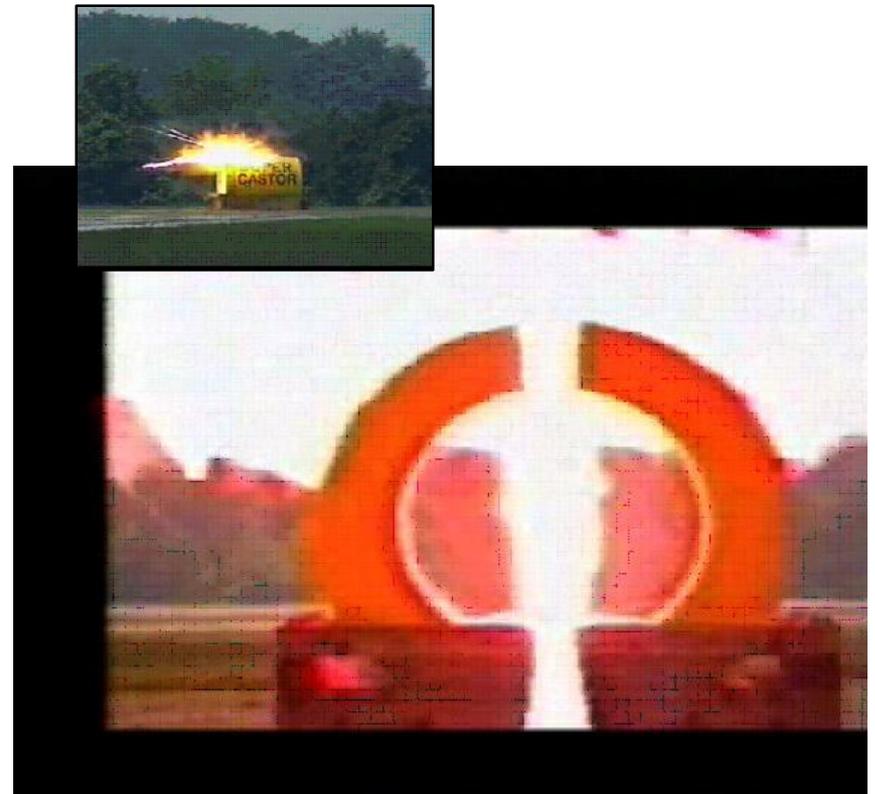


# Shipping Casks Are Vulnerable to Terrorist Attacks

Truck Cask Test, 1982



Rail Cask Test, 1998



# What Should Be Done?

- Walk away from Yucca Mountain
- Restructure high-level nuclear waste program as recommended by Blue Ribbon Commission (BRC) on America's Nuclear Future (2012)\*
- Implement BRC recommendations for new repository performance standards and repository consent-based siting
- Address stakeholder concerns about at-reactor storage
- Implement National Academy of Sciences (2006)\*\* and BRC transportation safety & security recommendations
- Implement BRC recommendations about consolidated interim storage, with priority for shutdown reactors
- Assess urban transportation infrastructure impacts & needs

\*Available on-line at: <https://energy.gov/ne/downloads/blue-ribbon-commission-americas-nuclear-future-report-secretary-energy>

\*\* Free download available at: <https://www.nap.edu/read/11538/chapter/1>