DOE Draft Supplemental EIS for Yucca Mountain: Preliminary Comments on Transportation Implications for California

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DSEIS Evaluates Impacts of Repository Use of TAD Canisters

- Under DOE Proposed Action, up to 90% of spent fuel would be loaded into Transport, Aging and Disposal (TAD) canisters at reactors and welded shut
- TAD canisters would be inserted into large transportation casks and shipped by rail to Yucca Mountain
- TADs are large (hold up to 10 MTU) and heavy (weigh up to 180 tons with impact limiters & skids)
- At about 25 reactor sites which lack rail access, TADs would be moved by barge or heavy haul truck to rail (Diablo Canyon)
- 10% of spent fuel would shipped directly to repository by truck (DOE says it would use over-weight trucks)

Uncertainties About Proposed TAD Canister System

- No final designs ("Proof of concept" only)
- NRC must approve TAD transport and storage components separately (10CFRPart 71 &72)
- Costs and financial arrangements are unknown
- Proposed TAD system incompatiable with dry storage systems currently in use at civilian nuclear power plants
- Utilities may decide not to use DOE TAD canister system
- All four California reactor sites may have specific problems with the proposed TAD system
- DSEIS offers no meaningful alternative to the proposed TAD canister system (Under the DSEIS No Action Alternative, "DOE would not construct a repository at Yucca Mountain.")

Use of TAD Canister Systems Creates Risks at Reactor Sites

- Risks associated with handling bare spent fuel assemblies, and loading and welding canisters (routine exposures, accidents)
- NRC has no clear role in regulating & inspecting TAD operations at reactors
- Uncertainties about waste acceptance at the repository and potential return of rejected TADs to originating sites

Uncertainties About Rail Transportation to Yucca Mtn

- TAD Canister system requires rail transportation
- Yucca Mountain lacks rail access
- DOE selected Caliente as preferred rail access option
- Estimated cost of Caliente railroad has escalated from $800 million in 2002 to $2.5-3.0 billion in 2007
- Strong opposition in Nevada likely to delay rail access
- One-third of shipping sites lack rail access
- Post 9/11 security concerns about cross-country rail shipments through major cities
- RA DEIS No Action Alternative: If DOE does not select Caliente or Mina rail alignment, future course "is uncertain"

DSEIS on Transportation Safety and Security Impacts

- Does not consider worst case accidents because DOE believes such combinations of factors "are not reasonably foreseeable"
- Underestimates consequences of severe accidents involving long duration fires
- Underestimates consequences of successful terrorist attack
- Dismisses potential for human error to exacerbate consequences of accidents or terrorist attacks
- Dismisses potential for unique local conditions to exacerbate consequences of accidents or terrorist attacks
- Acknowledges that clean-up costs after very severe incident resulting in release of radioactive material could range from $300,000 to $10 billion

DSEIS Total Shipment Numbers

- Proposed Action (70,000 MTU,50 years)
  - Rail Casks: 9,495
  - Truck Casks: 2,650
- Expanded Repository (133,000 MTU,)
  - Rail Casks: 24,112
  - Truck Casks: 5,025

Source: DSEIS, p. 8-32

DSEIS Shipments through California

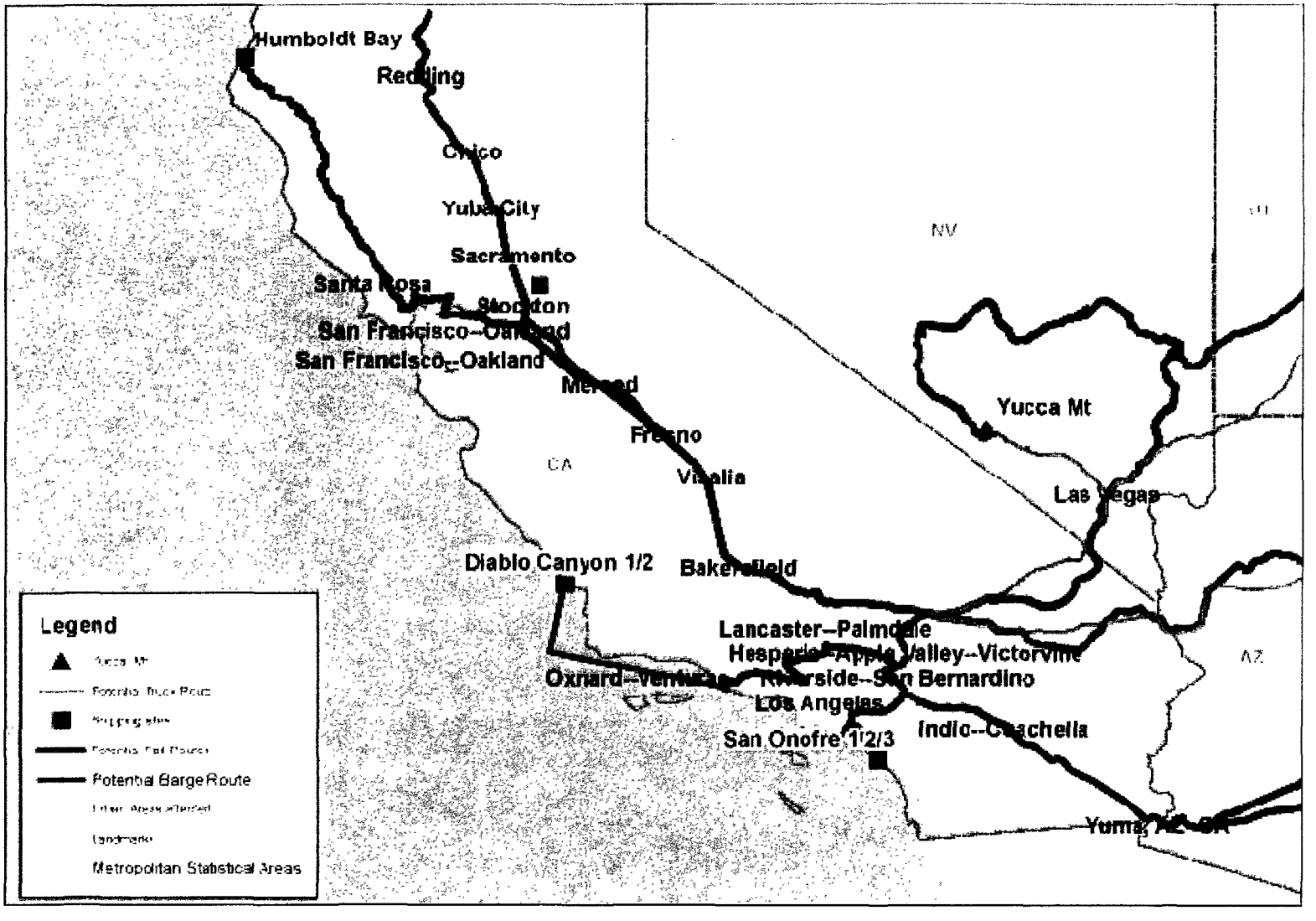
- Proposed Action (Caliente Option)
  - Rail Casks: 755 (8 % of total)
  - Truck Casks: 857 (32% of total)
- Proposed Action (Mina Option)
  - Rail Casks: 1,963 (21% of total)
  - Truck Casks: 857 (32% of total)

Source: DSEIS, p. G-64

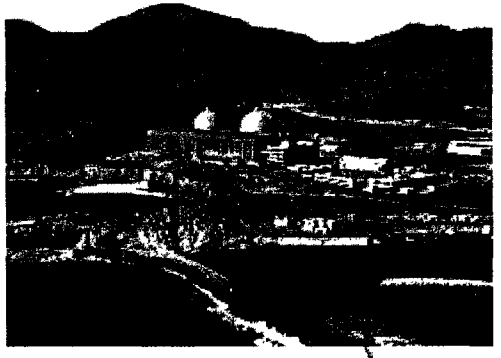
DSEIS on California Shipments

- DSEIS ignores potential for larger number of rail cask shipments through CA for Caliente or Mina options (>4,400, or >45% of total)
- DSEIS ignores potential for rail shipments on BNSF Railroad to San Bernardino
- DSEIS conceals potential for large number of barge shipments from Diablo Canyon to Port Hueneme (>300 rail casks on >300 barges)
- DSEIS Ignores potential for large number of LWT shipments through CA if no rail access (>24,000, >45% of total)

California Cities along Probable Routes to Yucca Mountain



Potential Barge Shipment Route from Diablo Canyon to Port Hueneme



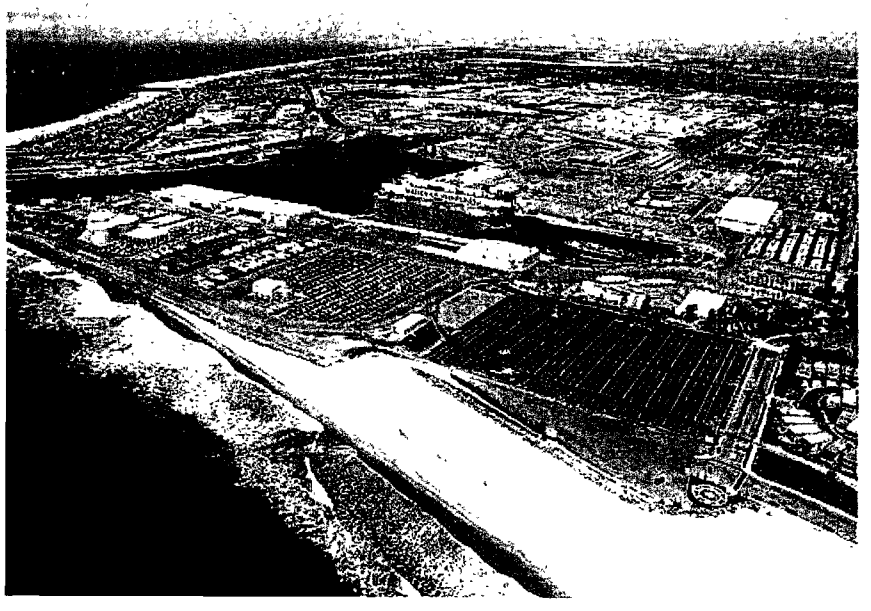
California

Potential for 121-312 barge shipments, according to FEIS (2002)

Diablo Canyon

Pacific Ocean

Oxnard, Port of Hueneme



California Implications

- Emergency Response funding for Nuclear Waste Shipments(180c)
  - Training and Equipment
  - Probably less than DOT HMEP grant
- Significant train transportation through urban areas and major rail hubs-Barstow

Institutional Issues

- Inspections, staffing, liability, mutual aid
- Significant Coordination required. Within 10 miles of rail routes there are:*
  - 33 Emergency care facilities
  - 19 Emergency centers
  - 282 Fire stations
  - 424 Police Stations
  - 5740 Schools

*Source: FEMA MH-HAZUS Database

More California Implications

- Impacts on Tribal lands (eight CA tribes impacted by rail shipments)
- Routine radiation
  - Exposed pop within 1600 meters of a rail route: approx 3.4 million people*
- Accidental release in an urban area: up to $10 billion to clean up (SDEIS, Pp.G-52-54)

*Source: Census 2005 Block group update

More California Implications

- Security
  - Civil unrest
  - Terrorism
- Economic
  - Death Valley National Park has not yet recovered from 9/11 Important economically-important in region
  - Vulnerability of major transportation system hubs to long-term disruption