

**Mineral County Oversight Program
Yucca Mountain Transportation Scenarios
Western Generator Sites
July 2007**

1.0 WESTERN GENERATOR TRANSPORTATION SCENARIOS

Rail and Truck Routing Scenarios and Points of Access

Transportation scenarios in this report are based upon State of Nevada’s presentation to the Nevada Commission on Nuclear Projects which identified western regional shippers and the routes used to access Yucca Mountain. Table 1 identifies three points of entry for western generators entering Nevada. Points of access for western rail shipments are assumed to access the Caliente rail corridor via a connection in Salt Lake City passing through Battle Mountain. Table 1 also identifies western generator sites that are not directly served by rail and require truck and intermodal connections. The Department of Energy maintains that it will construct intermodal facilities at each generator site. This may be difficult when sites are located a significant distance from a railhead and would likely encounter local opposition.

Table 1
Rail Scenarios-Western Generators

Site	Rail Served	Shipments Mod. I	Shipments Mod II.	Points of Access-Rail		
				NE Nevada	Reno	Las Vegas
Washington						
Hanford	Yes	539	3,057	X	X	
WPSS	Yes	77	159	X	X	
Oregon						
Trojan	Truck/Int	33	33		X	
California						
Humboldt	Truck/Int	6	6		X	
Rancho Seco	Truck/Int	21	21		X	
Diablo Canyon	Truck/Int.	121	318		X	X
San Onofre	Yes	138	277		X	X
Arizona						
Palo Verde	Yes	193	293		X	X
Total Shipments		1,128	4,164	616-3,216	1,128-4,164	888

Truck/Int = Truck to intermodal location and facility required.

Table 2 shows total truck shipments from western generators and potential points of access for truck entering Nevada. For U.S. 95 the shipments would enter at McDermitt Nevada or Reno and travel south on U.S. 95 to Yucca Mountain. Truck shipments from western generators are more likely because rail shipments would have to travel back to Salt Lake City in order to access the Caliente corridor. The additional travel back distances for western reactors may result in more truck shipments from western reactors.

**Table 2
Truck Scenarios-Western Generators**

Site	Shipments Mod. I	Shipments Mod II.	Points of Access-Truck			
			NE Nevada	U.S. 95	Reno-I80	Las Vegas
Washington						
Hanford	754	809	X	X	X	
WPSS	415	1,006	X	X	X	
Oregon						
Trojan	195	195		X	X	
California						
Humboldt	44	44		X	X	
Rancho Seco	124	124		X	X	
Diablo Canyon	729	2,101		X	X	X
San Onofre	853	1,698		X	X	X
Idaho						
INEEL	1,388	1,467	X	X		
Total shipments	4,502	7,444	2,557-3,282	4,502-7,444	3,114-5,977	1,582-3,799

Current DOT guidance for high-level waste shipments requires a shipper to use the interstate system to the nearest U.S. highway. The state of Nevada has not designated an alternate route. A likely candidate for a designated truck route would be U.S. 93 and Highway 6 through Ely. In the event that such a route is designated, waste shipments entering at Reno and McDermitt, Nevada would travel the parts of Interstate 80 and enter the designated highway corridor at Wells, Nevada. For most western generators, U.S. 95 south through Hawthorne is more consistent with DOT routing guidelines.

Figure 1 in the appendix shows western generator sites and designated preferred highway routes. Most western states except Nevada have designated state highway routes.

Key Routing Assumptions for Table 1 and 2

1. Use California designated highway spent fuel routes.
2. Nevada routes include the interstate system and national highway system.
3. Transportation routes (rail or truck) would not go through Las Vegas.
4. Minimize the total number of routes for due to emergency preparedness costs.

2.0 ROUTING AND POINTS OF ACCESS BY STATE

Section 2.0 discusses the routing and points of entry for each state surrounding Nevada for both rail and truck routes.

Washington Generator Sites

Rail Routes:

- Mina Route

The State of Nevada identified both generator sites as shipping to Yucca Mountain through Reno and Sparks.

- Caliente Route

These two generator sites would probably use the rail line connecting into Salt Lake City and then consolidate with other shipments going Yucca Mountain through northern Nevada.

Truck Routes:

- U.S. 93/6/50

Interstate 84 to U.S. 93 would require more shipment miles to Yucca Mountain as compared to a U.S. 95 combination.

- I-80/50/U.S.95

The Washington sites could use I-84 to U.S. 95 then south to Yucca Mountain. This route would provide the most direct access to Yucca Mountain consistent with U.S. DOT routing criteria.

California Generator Sites

Rail Routes

- Mina Route

California generator sites would ship through Reno and Sparks.

- Caliente Route

California generator sites would likely enter the State at Reno or north of Reno and utilize the U.P. to Salt Lake City passing through Northern Nevada.

Truck Routes

- U.S. 93/6/50

It is unlikely that California generators would use U.S. 93/6/50 given the availability of so many highway access routes. Southern generator sites such as San Onofre could use a multitude of routes to access Yucca Mountain if they were designated.

- I-80/50/U.S.95

California generators would likely enter Nevada at Reno and travel to Yucca Mountain on U.S. 95 through Fallon and Schruz. Interstate 80 is a California designated radioactive waste shipment route.

Arizona Generator Sites

Rail Routes

- Mina Route

The State of Nevada identified this generator site as shipping to Yucca Mountain through Reno and Sparks. Palo Verde would have to send rail shipments a significant distance to the east before it could access a west bound rail line.

- Caliente Route

This generator site is fairly isolated in terms of access to Yucca Mountain. It could enter Nevada at Reno as envisioned by the State of Nevada or take an alternate route to the east and then north then into the Caliente Corridor.

Truck Routes

Due to its southern location it is difficult to envision that Palo Verde shipments would enter Nevada at Reno or West Wendover.

Oregon

Rail Routes

- Mina Route

The State of Nevada identified Trojan site as shipping to Yucca Mountain through Reno and Sparks.

- Caliente Route

The Trojan site would probably enter Nevada at Reno or just north of Reno connecting into Salt Lake City and then consolidate with other shipments going Yucca Mountain.

Truck Routes

- U.S. 93/6/50

Interstate 84 to U.S. 93 requires more shipment miles than and truck route from the Trojan site through Reno or I-84 and U.S. 95.

- I-80/50/U.S.95

The Trojan site could use I-84 to U.S. 95 then south to Yucca Mountain. This route would provide the most direct access to Yucca Mountain consistent with U.S. routing criteria. It is also possible for the site to enter at Reno, Nevada by using I-5 and I-80.

Idaho Generator Sites

Rail Routes

- Mina Route

INEEL would ship to Salt Lake City then access Mina from the east with the majority of national shipments moving west through northern Nevada.

- Caliente Route

INEEL would ship to Salt Lake City then access the Caliente corridor from the east with the majority of national shipments.

Truck Routes

- U.S. 93/6/50

The use of Interstate 84 to U.S. 93 would have roughly the same shipment miles as a I-84 to U.S. 95 route.

- I-80/50/U.S.95

INEEL could use I-84 to U.S. 95 then south to Yucca Mountain. This route would provide the most direct access to Yucca Mountain consistent with U.S. routing criteria.

3.0 MAXIMUM TRANSPORTATION IMPACTS FROM WESTERN GENERATORS

This section describes the maximum transportation impacts without the Mina Rail option. The maximum rail shipments would move through northern Nevada if the Mina Rail option becomes available. Otherwise, all rail shipments will utilize the Caliente Corridor. There is some uncertainty as to the exact mode of transportation used by western sites given their proximity to Yucca Mountain and the limited access to existing rail lines.

Fallon/Churchill County

Rail Impacts: A large number of western rail shipments could move through Churchill County even without the Mina rail option. As many as 4,164 train shipment could occur under module 1 and 2. All western sites could ship through Churchill County including the Palo Verde site in Arizona.

Truck Impacts: The total number of truck shipments through Churchill County using U.S. 95 could range from 3,114 to 7,444. Most of the shipments could enter at Reno with shipments from Washington and Idaho entering at McDermitt.

Battle Mountain/Lander County

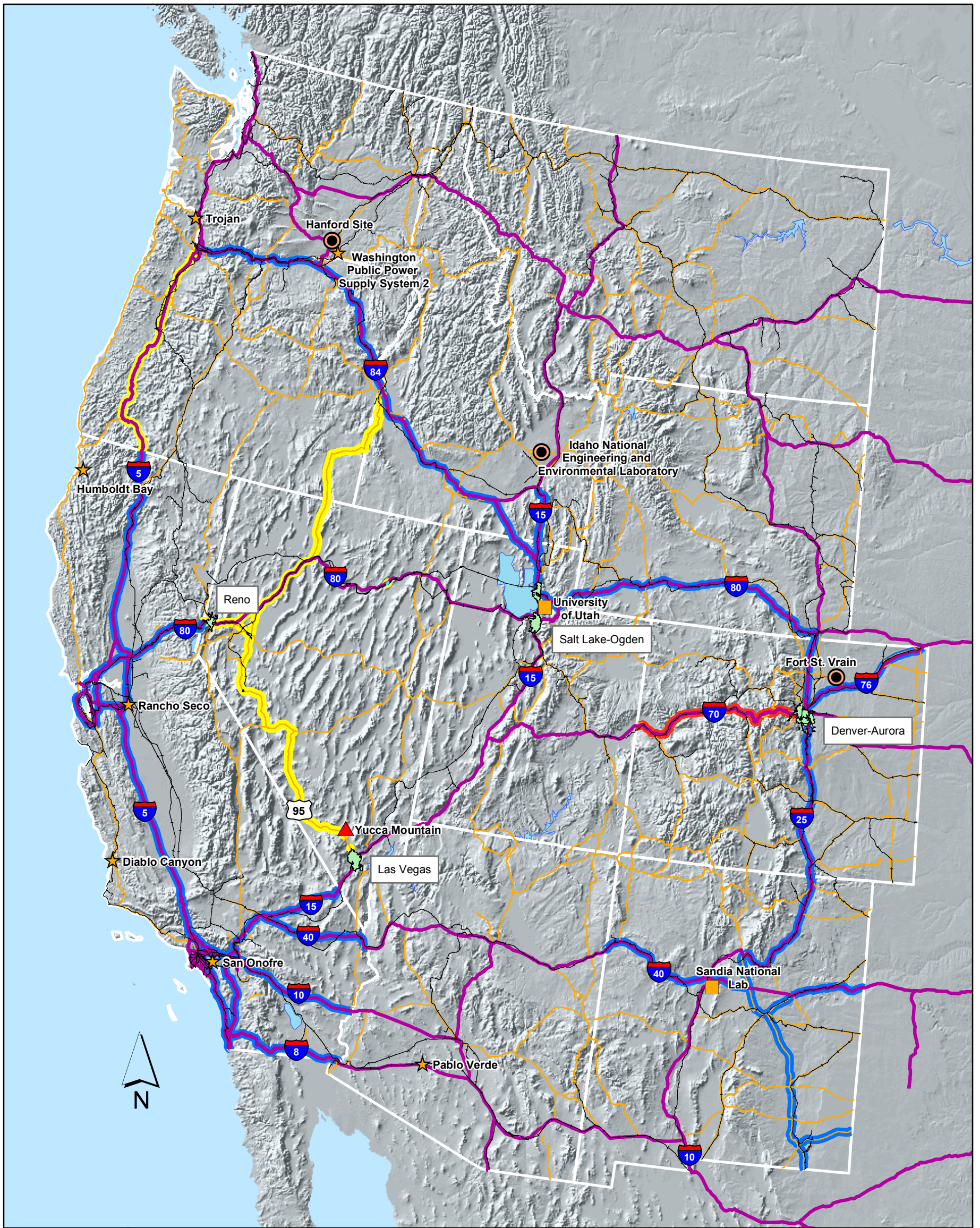
Rail Impacts: The impacts would be the same as those described for Fallon/Churchill County. Shipments would move in an eastbound direction to Salt Lake City and then to the Caliente Corridor.

Truck Impacts: The total number of shipments could range from 3,114 to 5,977. These shipments would move in an eastbound direction to U.S. 93/50/6 in the event a northwestern route (U.S. 95) is not available.

Hawthorne/Schurz

Rail Impacts: There would be no rail impacts without the Mina Route.

Truck Impacts: Same as those described for Fallon/Churchill County.



Legend

Nuclear Waste Sites

TYPE

- ★ Commercial Sites
- DOE Sites
- ▲ Yucca Mountain
- Research Sites

- Major Railroads
- Interstate Highways
- US Highways
- State-Designated Preferred Routes
- Likely Routes
- Restricted Routes
- Urban Areas



Western Generator Sites and Preferred Nuclear Waste Highway Transportation Routes

Sources: Figure J-5, "Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-level Radioactive Waste at Yucca Mountain, Nye County, Nevada, 2001" and "National Map of Waste Locations", March 2002. Both published by the U.S. Dept. of Energy Office of Civilian Radioactive Waste Management.

State-designated preferred routes taken from a map created by the Nevada Small Business Development Center.

Site locations are approximate.

