

**CONSIDERATIONS IN LOCATING
SAFE PARKING AREAS FOR TRUCKS TRANSPORTING
SPENT NUCLEAR FUEL AND HIGH LEVEL
RADIOACTIVE WASTE THROUGH LINCOLN COUNTY**

Prepared For:

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Overview

At the time of this report, the federal government has not developed specific plans for the establishment of safe parking sites for the transportation of spent nuclear fuel/high level waste (SNF/HLW) to the proposed long term storage facility at Yucca Mountain. Alternative transportation routes have been identified in the Department of Energy's (DOE's) Final Yucca Mountain Environmental Impact Statement (FEIS). Under existing federal guidelines, local governments are within their prescribed rights to determine and designate their own safe parking areas. Descriptions of several state safe parking area initiatives are contained in the following sections of this report. Most of the established guidelines have been developed for safe parking for vehicles transporting transuranic waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico. With several possible transportation routes being considered through Lincoln County for eventual shipments of SNF/HLW planned for 2010, it is prudent to consider designating the safe parking issue a priority in preparing for these shipments. Siting, development and operation of safe parking areas related to the Nevada Test Site (NTS) to WIPP shipments would precede and otherwise establish a local precedent and capability within Lincoln County for eventual SNF/HLW shipments to the Yucca Mountain repository.

Safe parking areas were adopted in the early 1990s for the transportation of transuranic waste for the Western Governors' Association (WGA) in conjunction with the DOE, by the member states of WGA where most of the transuranic waste shipments originate. Transuranic waste consists of clothing, tools, rags, residues, debris and other such items contaminated with small amounts of radioactive elements - mostly plutonium. These elements are radioactive, man-made, and have an atomic number greater than uranium - thus transuranic (beyond uranium). This waste is mostly transported by legal-weight truck, which could be the mode of transportation selected for the Yucca Mountain SNF/HLW destination, although the same safe parking concepts could be applied to mostly rail and heavy haul truck shipments.

Because much of the alternate highway transportation routes to Yucca Mountain are located in mountainous areas that are quite often subjected to rapid changes in climatic conditions, and given the potential for transportation incidents, safe parking areas should be established well before any actual shipments take place. Other factors that would necessitate the establishment of safe parking would be mechanical problems of the transports, bad road conditions, political/domestic disturbances, and any other unanticipated developments.

Along with the above situations, historical incident rates (i.e. leaking containers, accidents, etc.) have to be considered in the handling and transportation of nuclear waste (See definition of incidents in Appendix). A separate document has been prepared for Lincoln County concerning the number of incidents that may be expected within the county during the transportation phase of the SNF/HLW shipments to the repository at Yucca Mountain (Possibility of Nuclear Incidents Occurring in Lincoln County During the Transportation of High Level Nuclear Waste

to A Proposed Repository at Yucca Mountain, 2002). The results of this document will be referenced within this report.

National Transportation Plan for the Shipment of SNF/HLW

The DOE Yucca Mountain FEIS presents two national transportation plans – “mostly legal-weight truck” and “mostly rail”. This was done to begin to estimate the number of shipments required to Yucca Mountain proposed by the FEIS Proposed Action (24 years) and under Modules 1 and 2 (38 years). The Proposed Action is to handle the SNF/HLW that is currently being stored around the country and Modules 1 and 2 were developed to deal with the additional SNF/HLW that will be generated in the years to come. A third possible mode of transportation is a combination of rail to an intermodal facility where shipments would be transferred to “heavy-haul” or legal-weight truck for the remainder of the route to Yucca Mountain as the proposed long-term facility is not served by rail.

Possible Transportation Routes in Lincoln County

Under federal law and regulation, SNF/HLW is known as Highway Route Controlled Quantities (HRQC). As HRQC, DOE must utilize the U.S. Interstate system and use the shortest routes possible to the fullest extent possible when transporting SNF/HLW by truck. Within Nevada, this results in the FEIS concluding that Interstate 15 through Las Vegas is the current legal route for moving SNF/HLW through Nevada to NTS. Governors are authorized to designate alternate routes to those compliant with HRQC regulations. In anticipation of a desire to avoid shipments of SNF/HLW through the Las Vegas metropolitan area, the State of Nevada Department of Transportation has identified possible alternatives to Interstate 15. These routes are identified in the DOE’s FEIS as Nevada Alternate A, Caliente-Rachael-Valley Road-Nellis Range, Caliente-Rachael-Nye County Line and Caliente-Crystal Springs-Clark County Line. All of these routes pass through Lincoln County. Eighty-seven percent of all national legal-weight truck shipments of SNF/HLW destined for Yucca Mountain could utilize any of these routes. Each route is described in the paragraphs to follow. Due to the uncertainty of a mostly rail mode of shipment (there is no rail line to Yucca Mountain and many of the existing storage sites are not served by rail) it is possible that the mostly legal-weight truck scenario (or the use of overweight trucks) will be adopted. For the purpose of this document, the safe parking considerations will be limited to legal-weight truck transportation of SNF/HLW and safe parking for possible rail shipments will be addressed at a later date.

Heavy-haul truck (overweight trucks) shipments are also not likely for the reasons that will be discussed in a following section. However, if the heavy-haul concept is adopted, the same type of safe parking areas should be designated and would perhaps involve much more mitigation because of the special needs of the this type of transportation.

Nevada Alternate Route A

This route would bring SNF and HLW south on U.S. 93 from Wendover, west on U.S. 6 to Nevada 318, south on Nevada 318 to U.S. 93 and south to the Clark County Line. This route covers 99 miles in Lincoln County. Under the Proposed Action plan this would result in 45,919 shipments over 24 years with 4,545,981 cumulative shipment miles. With an incident rate of 10.5/million miles there would be an expected 47.7 incidents occurring in Lincoln County. Module 1 would require 91,946 shipments over 38 years with 9,102,654 shipment miles and perhaps 95.7 incidents in the County. Module 2 calls for 94,433 shipments, 9,348,895 shipment miles and perhaps 98.2 incidents. (See Table 1 in Appendix for a comparison of routes)

Caliente-Rachel-Valley Road-Nellis Range

This scenario would envision bring SNF and HLW into Caliente by rail on “piggy-back” legal-weight trailers and transferring them to truck transport south on U.S. 93 to Crystal Springs, west on Nevada 375 to Rachel and south on Valley Road to the Nellis Range. This route encompasses approximately 111 miles in Lincoln County. Under the Proposed Action the same number of shipments (45,919) would result in 5,097,009 shipment miles and perhaps 53.5 incidents occurring within the County during the 24-year period. Module 1 would require 91,946 shipments totaling 10,206,000 cumulative shipment miles and 107.2 incidents in Lincoln County over the 38-year period. Module 2 would result in 94,433 shipments, 10,482,094 cumulative shipment miles and perhaps 110.1 incidents.

Under the mostly legal-weight truck plan there would be a significant rail factor because of the “piggy-backing” concept. In this case, it is reasonable to assume that 100% of anticipated legal-weight truck trailers could be “piggy-backed” by rail and therefore total shipments in the Proposed Action plan would be 46,185 entering Lincoln County from the north along 40.2 miles of track to Caliente. This scenario would result in 1,856,637 cumulative shipment miles and perhaps 36 incidents in the County over the 24-year period. During this same time period, 6,906 shipments would enter Lincoln County from the south over the 65 miles of track to Caliente and result in 448,890 cumulative shipment miles and an additional 8.7 incidents within the County. In Module 1 there would be 92,207 shipments, 3,706,719 cumulative shipment miles and 71.9 incidents over the rail route from the north and 13,517 shipments, 878,605 cumulative shipment miles and an additional 17 incidents over the rail route from the south. Module 2 would involve 94,742 shipments from the north, 3,808,634 cumulative shipment miles and 73.9 incidents occurring in Lincoln County. From the south there would be 14,157 shipments, 920,205 cumulative shipment miles and perhaps another 17.8 incidents within the County over the 38-year period.

Caliente-Rachel-Nye County Line

This route is almost identical to the above route with the exception of the last section where instead of going south on Valley Road to the Nellis Range, the route would continue west

through Rachel to the Nye County Line. The difference between the two routes is about 2 miles and would be negligible in the number of total shipment miles and incidents.

Caliente-Crystal Springs-Clark County Line

This route would also envision bringing SNF/HLW to Caliente by rail on “Piggy-back” trailers and transferring to legal-weight truck on U.S. 93 south to Crystal Springs and continuing south to the Clark County Line. The length of this route in Lincoln County is 117 miles. Under the Proposed Plan this would involve 45,919 shipments and 5,372,523 shipment miles that could create 56.4 incidents within Lincoln County over the 24-year period. The Module 1 plan would create 91,946 shipments and generate 10,757,676 cumulative shipment miles with an anticipated 113 incidents within the County. Module 2 would generate 94,433 shipments, 11,048,694 cumulative shipment miles and perhaps 116 incidents.

Heavy-Haul Truck

In the FEIS, DOE has proposed that part of the solution to the problem of the transporting of SNF/HLW to the Yucca Mountain Repository could be solved by the use of a Heavy-Haul Truck (HHT) scenario. Several alternatives have been proposed, but under each, SNF/HLW would be transported by rail to an intermodal facility where it would be transferred to HHT which are extremely over-sized trucks capable of carrying the very large casks that are envisioned to be used in the mostly rail scenario. These vehicles could be up to 220 ft. long are accompanied by escort support, are limited to 20-50 mph and are only allowed to travel during daylight hours. This would require many pullout areas on the routes and would interfere with regular personal, commercial, and tourist travel. It would also mean that the 100-mile route within Lincoln County would take 4-6.5 hours under the most favorable conditions. Much of the route involves steep grades and sharp curves through high-mountain passes. The HHT routes would require substantial upgrading and would likely cost more or as much as a rail spur. Because this type of vehicle has not been developed on a large scale and has never been used in this type of scenario for the transportation of SNF/HLW, there are no statistics to indicate how practical this process would be. But once again, if heavy-haul transportation is chosen, the same safe parking concepts should be applied.

Federal Motor Carrier Safety Administration Guidelines

In guidance documents provided by the Federal Motor Carrier Safety Administration, “the selection of safe parking is a decision of the “competent government authorities” having jurisdiction over the area”. The definition found in §397.5(d) (3) is purposely void of any specific guidelines or criteria. “A truck stop may be considered a safe haven (parking area) if it is so designated by local or State governmental authorities”. Further “§397.5(d)(3) describes a safe parking area as “... an area specifically approved in writing by local, State, or Federal governmental authorities for the parking of unattended vehicles containing Division 1.1, 1.2, or 1.3 materials.” The same criteria apply to the shipment of radioactive materials.

Western Governors' Association/WIPP/DOE Guidelines for Safe Parking

The Western Governors' Association (WGA) WIPP Technical Advisory Group has worked cooperatively with the DOE to develop a safe transport program for WIPP shipments (WIPP Transportation Safety Program Implementation Guide [PIG]). Under a contract with WGA, the Western Interstate Energy Board (WIEB) in 1990 developed criteria for safe parking areas for WIPP shipments. Plans have been developed to incorporate two factors: 1) the *desirability* of a particular type of parking area; and 2) the driver's *ability* to reach that parking area under different types of emergencies.

The Criteria for Selection of Safe Parking Areas

First Choice – Department of Defense (DOD) and DOE facilities

DOD & DOE facilities are the most desirable parking areas for WIPP shipments. However, it may not be possible for the driver to safely reach a DOD or DOE facility. The driver should then proceed down the hierarchy in selecting a parking area. DOD facilities will not be available if the safe parking location is required due to damage to a Transuranic Package Transporter (TRUPACT - container).

Second Choice – Specific types of places (possibly, but not necessarily, predesignated by states)

e.g. truck stops, state highway department sheds, ports of entry, National Guard units
Specific types of facilities are likely to be more common than DOD or DOE facilities. State-specific information on the types of facilities that are acceptable are listed in the Appendix. If the driver cannot reach one of these types of facilities, the driver should use the Third Choice criteria.

Third Choice – Factors to avoid:

- Highly populated areas
- Areas that are difficult to evacuate in case of emergencies – (e.g. hospitals, schools)
- Industrial areas (e.g. refineries)
- Areas with difficult access
- Crowded parking areas
- Parked trucks carrying flammables or explosives
- Poorly lighted areas
- Highway shoulders
- Residential areas
- Areas with numerous pedestrians
- Areas without driver services (e.g. food)

If no DOD or DOE facilities or facilities listed in the second tier can be reached safely, a series of avoidance factors should be applied to select a parking area. No priorities have been assigned

to these factors. It may not be possible to select a parking site that meets all of the criteria listed in the third tier. Compromises may be necessary. (Safe Parking for WIPP Shipments, Dec. 2002, Rev. 6)

Nevada Criteria for WIPP Safe Parking Areas

To date, the State of Nevada has identified only one safe parking site for the shipment of transuranic waste to WIPP, that being the NTS; although WGA information also lists Nellis Air Force Base as a designated site. It is further the policy of the state to return any shipments to the point of origin if there is any question or concern for public safety. Nevada has not established a second or third choice for designated safe parking areas (See Appendix). Contract transportation drivers are instructed to select safe parking based on the areas to avoid listed above. The final decisions as to the selection of safe parking areas are delegated to local governments (to be designated before shipments) or local law enforcement officials in case of emergencies.

WIPP Transportation and Safe Parking Procedures

DOE developed the Transportation Tracking and Communication System (TRANSCOM) to track and communicate with vehicles transporting “high visibility” unclassified shipments, such as spent nuclear fuel, high level and transuranic waste. All trucks transporting transuranic radioactive waste to the WIPP at Carlsbad, New Mexico, are monitored with this system.

TRANSCOM, which has an around-the-clock control center (WIPP Central Monitoring Room [CMR]), uses satellite communications and computer networks to monitor shipments from beginning to end. The control center houses a database containing scheduling, routing, shipment content and emergency response information about each WIPP shipment. Federal, state and tribal officials have access to this database. Vehicles transporting waste to WIPP are tracked by satellite. The vehicle’s position is transmitted to a satellite receiving station and relayed to the TRANSCOM control center.

With TRANSCOM, shipment information is displayed on computer-generated maps and can position a vehicle within 1,000 feet. Officials with access to TRANSCOM can monitor this information on their computers. Drivers and others with access to the system communicate with one another through TRANSCOM’s central operator. Currently, the DOE, state and tribal officials can exchange information about abnormal events, or changes in weather or road conditions.

All WIPP shipments are thoroughly inspected before and during each shipment. Transport drivers are methodically screened and must meet the most rigorous standards in the commercial transport field. Each shipment is under the direction of a two-man driving team, one of which must stay with the vehicle at all times. Once a shipment leaves the origin facility, the transportation contractor is fully responsible for the shipment until it arrives at the WIPP storage

facility in New Mexico. Any problems along the way are immediately reported to the TRANSCOM center and local/state officials. It is the transportation contractor's responsibility to immediately react to and handle any unforeseen emergency. Safe parking areas have been established by each state and/or local government and every effort is made to reach these areas in case of need. Sometimes however, due to accident, weather, mechanical failure or other causes, it may not be possible to reach a safe parking area. In these cases, the third choice, Factors to Avoid, is used to find the best available location. To meet an immediate emergency, use of safe parking may be initiated by the WIPP driver or on-scene law enforcement. Otherwise, use of safe parking will be coordinated and passed to the WIPP driver by the CMR. A similar approach is likely for SNF/HLW shipments to Yucca Mountain.

Under the WIPP PIG, specific direction by an on-scene law enforcement officer will take precedence over guidance in this procedure. However, if the guidance in the PIG is superseded, the shipment will be moved as necessary to conform with this guidance as soon as on-scene law enforcement officers will allow, and in consultation with the state.

The WIPP National TRU Waste Logistics Team Leader or designee will coordinate with The appropriate state agency on selection of a safe parking location, and on when it is appropriate to leave safe parking and resume travel. (Safe Parking for WIPP Shipments, Dec. 2002, Rev. 6)

As of December 2003, the WIPP facility in Carlsbad, New Mexico, had received 2,240 transuranic waste shipments with a total accumulation of 2,260,777 shipment miles. According to WIPP officials, the use of safe parking facilities during those shipments was "way less than 1% - and the vast majority of the time it was for weather related reasons". Not all member states responded to an inquiry as to the numbers and types of safe parking use during the transport of these WIPP shipments through their jurisdictions, but through direct contact, the following data seems to be representative of the types of incident use. (See Appendix for WIPP Shipment Figures)

Idaho has not had an incident of safe parking use, but has designated the DOE facility at the Idaho National Engineering and Environmental Laboratory (INEEL) plant and the DOD facilities at Mountain Home Air Force Base and Gowen Field in Boise as their First Choice safe parking sites.

Oregon has used safe parking for just one shipment. This occurred in April 2003, when an unexpected show squall caused a number of accidents and resulted in closure of Interstate 84 east of La Grande, Oregon. Based on the location of the truck at the time, the shipment sought safe parking at a truck stop in La Grande where it remained for only two to three hours before road conditions improved.

Wyoming reported that, although they do not have exact figures, they have had a dozen or so situations due to road conditions/weather/timing for entry into Colorado. The majority of these safe parking uses were at truck stops; however, on two occasions, Warren Air Force Base was used.

The State of Washington has not had to engage Safe Parking procedures to date. If they had to, the first choice safe parking area would be the State Patrol Office located in Nennewick, and the second choice would be the Port of Entry at Plymouth. Washington chose these two sites because they are both protected with uniformed officers. (See Appendix for complete list of WGA member states' safe parking criteria)

Each of the involved states has selected existing facilities to designate as safe parking, as opposed to constructing new safe parking sites. The most common use of safe parking in inclement weather has been truck stops and even on occasion road-side rest areas have been used. In worst case scenarios, transport trucks can pull off to the side of the road as long as there are 5-6 feet between the parked transport and the highway.

Recommendations for Safe Parking Areas in Lincoln County

In order to prepare for the possibility of SNF/HLW shipments through Lincoln County, it is prudent to consider steps to be taken to locate and designate safe parking areas within the County. With the existing safe parking plans for the transportation of transuranic waste shipments, it makes sense to prepare current plans using the safe parking guidelines adopted by the WGA for WIPP shipments and modify these plans to conform to any future guidelines that may be adopted by state or federal officials to accommodate SNF/HLW shipments.

In light of the fact that at this time DOE has not finalized a transportation plan for the shipment of SNF/HLW to the proposed Yucca Mountain Repository, and given the current state and national concerns for the transportation modes and routes, it is practical to assume that the ultimate transportation decision will involve shipment by rail to an intermodal facility and off-loading legal-weight truck containers for the remainder of the trip. If an intermodal facility is designated and ultimately constructed in Caliente, it could function as a safe parking facility that would serve the transportation routes in the eastern portion of the County. The Lincoln County Assessor has confirmed that the DOE/DOD do not have title to any additional property within Lincoln County other than the Nevada Test Site and Nellis Bombing Range. Therefore, under the WGA Safe Parking Guidelines, another site for the safe parking would be within boundaries of the Nellis Range (Gate 710)/NTS on DOD/DOE property.

Using the Second Choice criteria as a possible direction to take, it is recommended that the local emergency management, public safety officials and members of JCCIAC of Lincoln County and Caliente tour the proposed transportation routes throughout the County and identify other existing areas that could be recommended for safe parking sites.

The County is further encouraged through the Nuclear Waste Oversight Office and the local emergency response/public safety departments to compile a complete list of Third Choice – areas to avoid – within the County. For practical purposes, this would probably include most of the populated areas such as the city/town limits of Pioche, Panaca, Caliente, Alamo and Rachael. Any other areas that the County officials determine to be avoided should be identified as well.

It is suggested that County officials consult and plan with state and federal officials in developing their concerns for these safe parking areas. The successful coordination, communication, and cooperation amongst all levels of government are vital for the safety of all persons involved in the possible transportation of HLW/SNF through Lincoln County.

Appendix

Table 1
Possible Transportation Routes in Lincoln County for SNF/HLW
Mostly Truck Scenario
Incident Rate @ 10.5/Million Shipment Miles for Truck
Incident Rate @ 19.4/Million Shipment Miles for Rail

Route		Number of Shipments	Length of Route	Number of Shipment Miles	Possible Incidents
Nevada Alternate Route A	Proposed Action	45,919 truck	99 miles	4,545,981	48
	Module 1	91,946 truck	99 miles	9,102,654	96
	Module 2	94,433 truck	99 miles	9,348,895	98
Caliente-Rachel-Valley Road-Nellis Range/Nye Co. Line	Proposed Action	45,919 truck 53,086 rail	111 miles 105.2 miles*	5,097,009 2,305,527	54 45
	Module 1	91,946 truck 105,985 rail	111 miles 105.2 miles*	10,206,000 4,585,324	107 89
	Module 2	94,433 truck 108,899 rail	111 miles 105.2 miles*	10,482,094 4,728,839	110 92
Caliente-Crystal Springs-Clark Co. Line	Proposed Action	45,919 truck 53,086 rail	117 miles 105.2 miles*	5,372,523 2,305,527	56 45
	Module 1	91,946 truck 105,985 rail	117 miles 105.2 miles*	10,757,676 4,585,324	113 89
	Module 2	94,433 truck 108,899 rail	117 miles 105.2 miles*	11,048,694 4,728,839	116 92

*Assumes all possible rail shipments from the north and south.

Source: Possibility of Nuclear Incidents Occurring in Lincoln County During the Transportation of HLW to A Proposed Repository at Yucca Mountain, Intertech Services Corporation, 2002

Table 2

WIPP Shipment Figures

As of December 22, 2003
WIPP has received 2,240 transuranic waste shipments

Site	Shipments	Miles
Argonne National Laboratory	11	18,667
Hanford Site	61	110,288
Idaho National Engineering and Environmental Laboratory	595	826,848
Los Alamos National Laboratory	71	24,282
Lawrence Livermore National Laboratory	0	0
Mound Plant	0	0
Nevada Test Site	0	0
Oak Ridge National Laboratory	0	0
Rocky Flats Environmental Technology Site	1240	877,212
Savannah River Site	262	403,480
Small Quantity Sites	0	0
Total to WIPP	2,240	2,260,777

Source: DOE, WIPP, <http://www.wipp.carlsbad.nm.us/transport.htm>

Definitions for Release and Contamination As Used In Transportation Incident or Events Reports

Release

An official definition for release from a cask is not found in the Nuclear Regulatory Commission's (NRC's) 10 CFR 71 (i.e., the Definitions section 71.4). However, an NRC definition of release as it pertains to transportation can be inferred from 10 CFR 71 as follows:

[10 CFR 71.4, Definitions] "Containment System means the components of a packaging intended to retain the radioactive material during transport."

[10 CFR 71.5 1, Additional requirements for Type B packages.] Paragraph (a)(1) prohibits loss or dispersal of radioactive contents for Normal Condition of Transport. Paragraph (a)(2) restricts escape of krypton or other radioactive materials for Hypothetical Accident Conditions. Finally, the word release is used in paragraph (b) which states: "Compliance, with the permitted activity release limits of paragraph (a) of this section must not depend upon filters or upon a mechanical cooling system."

From the above 10 CFR 71 material we can develop a definition that is consistent with NRC's rules and regulations. Release means loss, dispersal, or escape of radioactive material from the package's containment system.

Contamination:

[10 CFR 71.87(1)(1) and (1)(2), Routine determinations.] refer to. non-fixed (removable) radioactive contamination on external surfaces. These paragraphs prescribe specific limits for transport of radioactive materials. However, a formal definition is not provided.

Although the NRC's regulations do not provide a definition for contamination in 10 CFR 71, a definition is provided in NUREG-0770 (U.S. Nuclear Regulatory Commission, Glossary of Terms Nuclear Power and radiation, NUREG-0770, Washington, DC 20555, June 1981).

Contamination: "The deposition of unwanted radioactive material on the surface of structures, areas objects, or personnel."

Definitions of Incidents

Hazardous materials transportation regulations (49 CFR 171) contain no distinction between an *accident* and an *incident*, and *incident* is the term used to describe situations that must be reported. Hazardous materials regulations (49 CFR 171.15) require the reporting of incidents if:

- A person is killed
- A person receives injuries requiring hospitalization
- The estimated property damage is greater than \$50,000
- An evacuation of the public occurs lasting one or more hours
- One or more major transportation arteries are closed or shutdown for one or more hours
- The operational flight pattern or routine of an aircraft is altered
- Fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of radioactive material
- Fire, breakage, spillage, or suspected contamination occurs involving shipment of infectious agents
- There has been a release of a marine pollutant in a quantity exceeding 450 liters (about 120 gallons) for liquids or 400 kilograms (about 880 pounds) for solids
- There is a situation that, in the judgment of the carrier, should be reported to the U.S. Department of Transportation even though it does not meet the above criteria

Criteria for Safe Parking Areas for WIPP Shipments

Shipments of transuranic waste to the WIPP may be delayed en route due to mechanical problems, adverse weather conditions, bad road conditions or other unanticipated problems. The Western Governors' Association (WGA) WIPP Technical Advisory Group has worked cooperatively with the Department of Energy (DOE) to develop a safe transport program for WIPP shipments. The development of criteria for safe parking locations is one element of this safety program.

Under a contract with WGA, in 1990 the Western Interstate Energy Board developed criteria for safe parking areas for WIPP shipments. DOE has agreed to implement these criteria for WIPP shipments.

A hierarchy has been developed to incorporate two factors: 1) the *desirability* of a particular type of parking area; and 2) the driver's *ability* to reach that parking area under different types of emergencies.

The criteria for selection of parking areas are:

Selection of Parking Areas	
<i>First Choice</i>	Department of Defense (DOD) and DOE facilities
<i>Second Choice</i>	Specific types of places (possibly, but not necessarily, predesignated by states) e.g., truck stops, state highway department sheds, ports of entry, national guard units
<i>Third Choice</i>	Factors to avoid: <ul style="list-style-type: none"> Highly populated areas Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools) Industrial areas (e.g., refineries) Areas with difficult access Crowded parking areas Parked trucks carrying flammables or explosives Poorly lighted areas Highway shoulders Residential areas Areas with numerous pedestrians Areas without driver services (e.g., food)

First Choice: DOD & DOE facilities are the most desirable parking areas for WIPP shipments. However, it may not be possible for the driver to safely reach a DOD or DOE facility. The driver should then proceed down the hierarchy in selecting a parking area. DOD facilities will not be available if the safe parking location is required due to damage to a TRUPACT.

Sec. Choice: Specific types of facilities are likely to be more common than DOD or DOE facilities. State-specific information on the types of facilities that are acceptable are listed in Part 2. If the driver cannot reach one of these types of facilities, the driver should use the *Third Choice* criteria.

Third Choice: If no DOD or DOE facilities or facilities listed in the second tier can be reached safely, a series of avoidance factors should be applied to select a parking area. No priorities have been assigned to these factors. It may not be possible to select a parking site that meets all of the criteria listed in the third tier. Compromises may be necessary.

State Specific Information

Arizona

First Choice for safe parking area:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking areas:	Camp Navajo
Second Choice for safe parking area:	Arizona plans to designate safe parking areas after completing a comprehensive study of the proposed route.
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid using the avoidance priority shown below:
Areas to avoid for safe parking areas:	<ol style="list-style-type: none"> 1. Highly populated areas 2. Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools) 3. Parked trucks carrying flammables or explosives 4. Residential areas 5. Areas with numerous pedestrians 6. Crowded parking areas 7. Highway shoulders 8. Areas with difficult access 9. Industrial areas (e.g., refineries) 10. Poorly lighted areas 11. Areas without driver services (e.g., food)
Contact action:	
Contact telephone number:	(602) 223-2212
Additional considerations:	Additional considerations may be added upon completion of the proposed study described above.
Circumstances when a route change would be preferable to parking:	These circumstances are dependent on the study results and recommendations.

California

First Choice for safe parking area:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking areas	To be determined before shipments begin.
Second Choice for safe parking area:	To be determined before shipments begin.
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas</p> <p>Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools)</p> <p>Industrial areas (e.g., refineries)</p> <p>Areas with difficult access</p> <p>Crowded parking areas</p> <p>Parked trucks carrying flammables or explosives</p> <p>Poorly lighted areas</p> <p>Highway shoulders</p> <p>Residential areas</p> <p>Areas with numerous pedestrians</p> <p>Areas without driver services (e.g., food)</p>
Contact action:	To be determined before shipments begin.
Contact telephone number:	To be determined before shipments begin.
Additional considerations:	
Circumstances when a route change would be preferable to parking:	To be determined before shipments begin.

Colorado

First Choice for safe parking area:	Department of Energy and Department of Defense facilities
DOE & DOD Facilities designated as safe parking areas	Rocky Flats Environmental Technology Site, Fort Carson, Pueblo Army Depot
Second Choice for safe parking area:	Other available DOE or DOD facilities with the approval of the Colorado State Patrol (CSP).
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas</p> <p>Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools)</p> <p>Industrial areas (e.g., refineries)</p> <p>Areas with difficult access</p> <p>Crowded parking areas</p> <p>Parked trucks carrying flammables or explosives</p> <p>Poorly lighted areas</p> <p>Highway shoulders</p> <p>Residential areas</p> <p>Areas with numerous pedestrians</p> <p>Areas without driver services (e.g., food)</p>
Contact action:	The driver should call the Colorado State Patrol (CSP).
Contact telephone number:	<p>Wyoming State Line to the El Paso County Line (North): (303) 239-4501 (Denver CSP, Regional Communication Center).</p> <p>El Paso County Line (North) to New Mexico State Line: (719) 544-2424 (Pueblo CSP, Regional Communication Center).</p>
Additional considerations:	Public rest areas are not appropriate parking areas for WIPP shipments.
Circumstances when a route change would be preferable to parking:	If an accident or unusual traffic blockage should occur while the shipment is traversing the I-25 corridor, it may be preferable to re-route the shipment. The Colorado State Patrol (CSP) will make the decision as to the alternate route to be used and whether a CSP escort will be required.

Idaho

First Choice for safe parking area:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking areas	INEEL, Mountain Home AFB
Second Choice for safe parking area:	Malad, Pocatello, and Blackfoot Highway Department yards, Ports of Entry, National Guard Facilities.
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas</p> <p>Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools)</p> <p>Industrial areas (e.g., refineries)</p> <p>Areas with difficult access</p> <p>Crowded parking areas</p> <p>Parked trucks carrying flammables or explosives</p> <p>Poorly lighted areas</p> <p>Highway shoulders</p> <p>Residential areas</p> <p>Areas with numerous pedestrians</p> <p>Areas without driver services (e.g., food)</p>
Contact action:	Enter parking locations into TRANSCOM.
Contact telephone number:	Idaho State Police, Regional Communications Center, Boise (208) 334-2900
Additional considerations:	None
Circumstances when a route change would be preferable to parking:	There are times when a route change with Idaho State Police escort would be preferable to parking.

Nevada

First Choice for safe parking area: Department of Energy and Department of Defense facilities.

DOE & DOD Facilities designated as safe parking areas Nevada Test Site/Nellis AFB

Second Choice for safe parking area:

Third Choice for safe parking area: Driver selects safe parking area based upon areas to avoid.

Areas to avoid for safe parking areas:

- Highly populated areas
- Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools)
- Industrial areas (e.g., refineries)
- Areas with difficult access
- Crowded parking areas
- Parked trucks carrying flammables or explosives
- Poorly lighted areas
- Highway shoulders
- Residential areas
- Areas with numerous pedestrians
- Areas without driver services (e.g., food)

Contact action: To be determined before shipments occur.

Contact telephone number:

Additional considerations:

Circumstances when a route change would be preferable to parking:

New Mexico

First Choice for safe parking:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking	Los Alamos National Laboratory (LANL) Kirtland AFB
Second Choice for safe parking area:	State predesignated parking area: Ports of Entry at Carlsbad, Gallup, Pojoaque, Raton and Vaughn
Third Choice for safe parking area:	If the driver cannot safely reach a DOE or DOD facility or a State predesignated parking area, the driver should select an appropriate safe parking area utilizing the [avoidance factors] listed below and notify the CMR of his location. The CMR should then contact the state for concurrence and/or additional guidance regarding the temporary parking location.
Areas to avoid for safe parking areas:	Highly populated areas Areas difficult to evacuate in case of emergency (e.g., hospitals, schools) Industrial areas (e.g., refineries) Areas with difficult access Crowded parking areas Parked trucks carrying flammables or explosives Poorly lighted areas Highway shoulders Residential areas Areas with numerous pedestrians Areas without driver services (e.g., food)
Contact action:	The CMR should call the State Police District 1 Communications Center, which can then contact appropriate personnel in the N.M. Department of Public Safety's Motor Transportation Division (MTD) and State Police Division (SPD), for concurrence and/or additional guidance regarding the driver's selection of a temporary parking location.
Contact telephone number:	State Police Dist 1 Communications Center – (505) 827-9300
Additional considerations:	Inappropriate areas include highway on/off ramps and congested rest areas.
Circumstances when a route change would be preferable to parking:	The state would have to be consulted regarding any proposed route change. Any deviation from a designated WIPP route in New Mexico must be made in accordance with the applicable federal regulations, 49 CFR 397.101(c).

Oregon

First Choice for safe parking area:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking areas	Umatilla Depot.
Second Choice for safe parking area:	Umatilla Port of Entry, Farewell/Bend Port of Entry (near Ontario).
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas</p> <p>Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools)</p> <p>Industrial areas (e.g., refineries, tank farms, chemical storage facilities, fertilizer manufacturers, etc.)</p> <p>Areas with difficult access</p> <p>Crowded parking areas</p> <p>Parked trucks carrying flammables or explosives</p> <p>Poorly lighted areas</p> <p>Highway shoulders</p> <p>Residential areas</p> <p>Areas with numerous pedestrians</p> <p>Areas without driver services (e.g., food)</p>
Contact action:	The Central Monitoring Room should notify the Oregon Emergency Response System for concurrence and/or additional guidance. The CMR should also notify the Umatilla Tribe if truck is on or approaching the Umatilla Indian Reservation.
Contact telephone number:	(503) 378-6377
Additional considerations:	None.
Circumstances when a route change would be preferable to parking:	If an accident is blocking the interstate and the police are rerouting other traffic, the WIPP shipments should follow the rest of the traffic. The Oregon Emergency Response System should be notified of the deviation in the route.

Utah

First Choice for safe parking area:	Department of Defense (DOD) facilities.
DOE & DOD Facilities designated as safe parking areas	Hill Air Force Base
Second Choice for safe parking area:	<ol style="list-style-type: none"> 1. Perry Port of Entry 2. Commercial Truck Stops
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools) Industrial areas (e.g., refineries) Areas with difficult access Crowded parking areas Parked trucks carrying flammables or explosives Poorly lighted areas Highway shoulders Residential areas Areas with numerous pedestrians Areas without driver services (e.g., food)</p>
Contact action:	The driver should notify Weber Communications if the safe parking procedure is invoked in Utah.
Contact telephone number:	(801) 965-4622
Additional considerations:	Selecting and arranging for safe parking is the driver's responsibility. Utah Department of Transportation resources listed can assist with these decisions.
Circumstances when a route change would be preferable to parking:	In the event of a long term road closure, an alternate route would be considered only after consultation with the Utah Department of Transportation, Motor Carrier Office (801) 965-4325.

Washington

First Choice for safe parking area:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking areas	Hanford
Second Choice for safe parking area:	None
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas</p> <p>Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools)</p> <p>Industrial areas (e.g., refineries)</p> <p>Areas with difficult access</p> <p>Crowded parking areas</p> <p>Parked trucks carrying flammables or explosives</p> <p>Poorly lighted areas</p> <p>Highway shoulders</p> <p>Residential areas</p> <p>Areas with numerous pedestrians</p> <p>Areas without driver services (e.g., food)</p>
Contact action:	Contact Washington State Patrol Communications Center
Contact telephone number:	(509) 575-2320, ext 0.
Additional considerations:	In the event of mechanical problems or adverse weather conditions, the shipment will be returned to Hanford.
Circumstances when a route change would be preferable to parking:	With the approval of the Washington State Patrol, alternate routes may be used in long-term emergencies. During short-term incidents/accidents, parking or limited detours may be utilized, depending upon the incident/accident.

Wyoming

First Choice for safe parking area:	Department of Energy and Department of Defense facilities.
DOE & DOD Facilities designated as safe parking areas	F.E. Warren AFB
Second Choice for safe parking area:	Truck stops, Ports of Entry Note: During road closures, truck stops become very congested. The potential for parking lot accident situations is high. Drivers should check with local Highway Patrol for better parking area during road closure.
Third Choice for safe parking area:	Driver selects safe parking area based upon areas to avoid.
Areas to avoid for safe parking areas:	<p>Highly populated areas Areas that are difficult to evacuate in case of emergency (e.g., hospitals, schools) Industrial areas (e.g., refineries) Areas with difficult access Crowded parking areas Parked trucks carrying flammables or explosives Poorly lighted areas Highway shoulders Residential areas Areas with numerous pedestrians Areas without driver services (e.g., food) Rest Areas</p>
Contact Action:	The driver should notify CMR of the safe parking location. The CMR enters the parking location in the Note section of the TRANSCOM Bill of Lading. The driver should call the Wyoming Highway Patrol for concurrence and/or additional guidance during road closures, if a problem selecting a safe parking location arises or if TRANSCOM is not working.
Contact telephone number:	Wyoming Highway Patrol – (307) 777-4321 F.E. Warren AFB: (307) 773-3921 or (307) 773-3501
Additional considerations:	Department of Transportation yards will not be available for parking WIPP shipments.

Circumstances when a route
change would be preferable
to parking: None

References

Clark County	Comments on Transportation Sections of the U.S. Department of Energy's 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
Department of Energy	Final Environmental Impact Statement for Yucca Mountain
Department of Energy	Transportation Accidents and Incidents Involving Radioactive Materials (1971-1998)
Federal Motor Carrier Safety Administration	Regulation §397.5(d)(3)
Intertech Services Corporation	Possibility of Nuclear Incidents Occurring in Lincoln County During the Transportation of High Level Nuclear Waste to A Proposed Repository at Yucca Mountain, 2002
Nevada Nuclear Waste Projects Office	Transportation of Spent Nuclear Fuel and High - Level Radioactive Waste to a Repository
Nuclear Regulatory Commission	10 CFR 71, 49 CFR 171
Nuclear Regulatory Commission	NUREG-0770
Science Applications International Corporation	Nevada Spent Nuclear Fuel Transportation Experience
Waste Isolation Pilot Plant (WIPP)	WIPP Shipment Figures, Transuranic Waste Transportation Containers, WIPP Waste Shipments Tracked by Satellite
Western Governors' Association	WIPP Transportation Safety Program Implementation Guide, 2002