Comments on the Nevada Transportation Components of the *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*

Submitted to
Nevada Nuclear Waste Project Office

by

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1.1 *Potential Actions and Decisions Regarding the Proposed Repository*

Page 1–3
Although it is uncertain at this time when DOE would make any transportation–related decisions, DOE believes that the EIS provides the information necessary to make decisions regarding the basic approaches (for example, mostly rail or mostly truck shipments), as well as the choice among alternative transportation corridors. However, follow–on implementing decisions, such as selection of a specific rail alignment within a corridor, or the specific location of an intermodal transfer station or the need to upgrade the associated heavy–haul routes, would require additional field surveys, state and local government consultations, environmental and engineering analyses, and National Environmental Policy Act reviews.

Comment: As discussed in the comments that follow, DOE has not demonstrated the technical, economic, or environmentally acceptable feasibility of transporting spent nuclear fuel and high–level radioactive waste to the proposed site. Absent this demonstration, DOE violates the National Environmental Policy Act by deferring the transportation related decisions. Specifically, if the proposed repository is approved based upon this EIS, DOE will begin to make a substantial commitment of resources to the proposed repository, even though the method of transportation to the site has not been determined. This could result in forcing a transportation related decision that results in unacceptable, adverse impacts. This is the scenario that the NEPA process is designed to avoid.

2.1.1.4 *Nevada Transportation Scenarios and Rail and Intermodal Implementing Alternatives*

Page 2–9
DOE is looking at three transportation scenarios for Nevada. These scenarios include legal–weight truck and rail, which are the same as the national scenarios but highlight the Nevada portion of the transportation, and heavy–haul truck.

Comment: Although DOE maintains that the "mostly legal weight truck" and "mostly rail" scenarios adequately bound the analysis for the national transportation scenarios, this is not true for the *Nevada Transportation Scenarios*. Under the "mostly legal weight truck" scenario, DOE must still deal with more than 300 rail shipments of high–level waste and Naval fuel (references). The

Nevada Transportation Scenario fails to describe how DOE will deal with these shipments without either constructing a rail line or operating an intermodal transfer site and heavy–haul.

2.1.3.2.1 *National Transportation Shipping Scenarios*

Page 2–40
These scenarios illustrate the broadest range of operating conditions relevant to potential impacts to human health and the environment.

Comment: This statement is incorrect, since the "Mostly LWT" scenario includes rail shipments. Without constructing a new rail line in Nevada or operating an intermodal transfer and heavy–haul in Nevada, the shipments dependant on rail will either have to be repackaged in smaller containers in Nevada or not shipped to the proposed repository at Yucca Mountain.

2.1.3.2.3 *Mostly Rail Shipping Scenario*

Page 2–43
Some of the logistics of rail transportation to the repository would depend on whether DOE used general or dedicated freight service.

Comment: There are significant differences in the operation of the shipping campaign if general freight is used instead of dedicated trains. Use of general freight could result in significant delays during shipping, will require shipments to pass through many rail yards that could be avoided, and will probably result in shipments being switched in the UP rail yard near Las Vegas prior to being sent to the Yucca Mountain specific holding track. These actions increase potential exposure to workers and the general population and increase the probability of accidents in yards in general and during switching activities. Therefore, DOE should include the use of general freight and the use of dedicated trains as two separate alternatives in the description of the *Proposed Action and Alternatives* section of the EIS.

2.1.3.3 *Nevada Transportation*

Page 2–44
The EIS analysis assumed that the proposed Interstate bypass around the urban core of Las Vegas (the Las Vegas Beltway) would be operational before 2010.

Comment: DOE should state the basis for this assumption in the EIS, including a description of the proposed funding and construction schedule for the beltway. Urban growth frequently occurs along newly constructed urban beltways, increasing traffic volumes on these highways. Therefore, the EIS should also include a projection of future growth patterns associated with the proposed beltway and a projection of future traffic volumes on the proposed beltway during the life of the shipment campaign.

Page 2–44
To indicate distinctions between available transportation options or modes in Nevada and to define the range of potential impacts associated with transportation in the State, this EIS analyzes three transportation scenarios: the first, associated with the national legal–wight truck scenario is a Nevada legal–weight truck scenario; the second and third, both associated with the national rail scenario, are rail transport directly to the Yucca Mountain site, and an intermodal transfer from railcar to heavy–haul truck for travel to the site.

Comment: This approach is seriously flawed for several reasons. DOE states "that it cannot predict the specific transportation mode (truck or rail) of each shipment to the repository." Therefore, none of the options described on page 2–44 accurately describe the proposed action for Nevada transportation, and hence, do not accurately bound the potential impacts. The statement that DOE cannot predict the specific mode for each shipment implies that DOE cannot control the mode of shipment. Even if one of the options is ultimately selected, sites could ship by any of the modes. Therefore, the legal–weight truck option could result in shipments by rail to Nevada. Without rail access, DOE will be forced to either repackage the materials before shipping them to the Yucca Mountain site, or to ship them by heavy–haul. If the rail or heavy–haul option is selected, sites could ship by legal–weight truck, resulting in many more shipments through Nevada than projected. Thus, it is impossible to accurately predict the impacts unless DOE selects a preferred alternative and implements some method of control over the mode selection for shipments.

DOE has not adequately demonstrated the technical, regulatory, economic, or environmentally acceptable feasibility of any of the options. As will be discussed in more detail later in these comments, there are serious flaws with each option. In summary, all of the rail route options (and hence, most of the heavy–haul route options) have serious land use, environmental, technical, and economic problems. The concept of an extensive heavy–haul shipping campaign on public highways may not be legally valid, and poses significant traffic safety concerns. The legal–weight truck option is itself dependant upon

the feasibility of either rail or heavy–haul access, and thus is not an independent option.

2.1.3.3.2 *Nevada Rail Scenario*

Page 2–47
Under this scenario, DOE would construct and operate a branch line in Nevada. Based on previous studies (described in Section 2.3), DOE has narrowed its consideration for a new branch rail line to five potential rail corridors—Caliente, Carlin, Caliente–Chalk Mountain, Jean, and Valley Modified.

Comment: DOE's corridor selection study is flawed. The first selection criteria used by DOE to select potential routes was land use compatibility. For this criteria, DOE selected corridors based upon using "land under public ownership, to the greatest extent possible, to minimize land–use conflicts." Favorable topography was used as a selection criteria only within "areas not excluded because of land–use conflicts" (Nevada Potential Repository Preliminary Transportation Strategy, Study 1, April 1995, page 25).

There are serious problems with this approach. Land ownership does not accurately reflect land–use. Most western ranching operations are based upon a combination of privately owned fee land and grazing leases on publicly owned lands. In many, if not all cases, the ranching unit depends on these grazing leases to be economically viable. Most grazing leases are held by the ranches that can access the lease as a logical part of their operation. Splitting an existing operation with a rail line, that will limit access to the leased land, can have significant adverse effects on the operation of the ranch. Using the avoidance of privately owned land as the corridor selection process without regard to the existing ranching operations' use of private and public lands may very well result in greater impact on an operation than using private land.

Most of the private land in western States with high percentages of federally owned land is land with gentle topography. Early settlers selected the flatter land for their own. The land with rugged topography was not settled, and remained in public ownership. This shift to rugged terrain to avoid private land is a dominant factor in most of the routes selected for further study in the 1990 *Preliminary Rail Access Study* as reflected by the following: "An option was selected from the Caliente area in order to avoid land use impacts encountered in most of the southern areas of Nevada, . . . The base route has the most favorable land–use compatibility, but would incur significant costs due to the complex engineering and construction required to traverse rough terrain"

(page 17). "However, the checkerboard pattern of private and public land ownership surrounding the railroads across northern Nevada makes the complete avoidance of private land difficult. The minimum impact departure point is a location about 5 miles west of Carlin. The terrain in this area is so rugged that private developers were uninterested in the land, and as a result, the greater portions of the terrain were left in BLM ownership" (page 21).

By using land ownership for the first selection criteria, DOE's selection process actually favored more rugged terrain where construction of the proposed rail line is more difficult. This creates many additional land use impacts due to the extensive cuts and fills required by unfavorable topography. These cuts and fills will further exacerbate the problem faced by ranchers of moving livestock and equipment across the rail line.

Crucial habitat for big game is frequently located in or near rugged terrain. This is especially true for crucial winter habitat. Daylight cuts required to traverse rugged terrain also pose a significant threat to big game, which tend to use these areas for movement, especially in times of heavy snow cover. When trapped in a daylight cut, big game cannot escape from an oncoming train, resulting in significant mortality rates for big game in these areas. Thus, the selection criteria that favors more rugged terrain by virtue of avoiding private land ownership greatly increases the potential impact on biological resources.

Roadless areas are also more likely to be found in rugged terrain. Virtually all potential wilderness areas are located on public lands. The selection criteria that avoids private lands results in more potential impact to roadless areas and potential wilderness areas.

2.1.3.3.2.1 *Rail Line Construction*

Page 2–49
Construction activities would include the development of construction support areas; construction of access roads to the rail line construction initiation points and to major structures to be built, such as bridges; and movement of equipment to the construction initiation points. The number and location of construction initiation points would be based on such variables as the route selected, the length of the line, the construction schedule, the number of contractors used for construction, the number of structures to be build, and the locations of existing access roads adjacent to the rail line.

Comment: The construction activities listed cannot be completed without some environmental impact, and will require appropriate mitigative measures. Without a detailed description of these activities it is impossible to conclude that they can be completed without causing unacceptable adverse environmental impacts, even with mitigative measures. Until these construction activities are specified, DOE cannot conclude that the proposed action will not result in unacceptable impacts as required by NEPA.

Page 2–50
Railroad track construction would consist of the placement of railbed material, ties, rail, and ballast (support and stabilizing materials for the rail ties) over the completed railbed platform.

Comment: Construction of the railroad in any of the proposed rail corridors will require significant quantities of ballast and probably significant quantities of sub–ballast. The EIS does not provide a description of the source for these materials. The quantity of ballast and sub–ballast required should be accurately defined, and sources for the material described. Quarrying the ballast and sub–ballast could result in significant environmental impacts not assessed in the EIS.

Page 2–50
Other activities would include the following: Installation of fences along the rail line, if requested by other agencies (for example, the Bureau of Land Management or the Fish and Wildlife Service).

Comment: The description of the proposed action should include the location and type of fencing to be installed. Without this information, it is not possible to assess the impacts of the proposed action, particularly on wildlife and on land use. The two agencies listed could, in fact, request conflicting requirements for fencing based upon the impact within their area of jurisdiction. Depending on the types and locations of fencing, the proposed action could create significant impacts to wildlife, particularly where the proposed corridors cross critical habitat areas.

Page 2–50
This EIS assumes there would be about four trains per week for shipments of spent nuclear fuel and high–level radioactive waste to the repository. In addition, the rail line would enable the transport of other material to the repository, including empty disposal containers, bulk concrete materials, steel, large equipment, and general building materials. The EIS assumes one train per

week for this other material for a total of about five trains per week to the repository from about 2010 to 2033.

Comment: The EIS does not include an estimate of the number of trains leaving the repository. This would presumably include return of empty shipping casks as well as additional unloaded cars that were used to ship materials to the site. One cannot automatically assume that the number of unloaded trains leaving the repository will be the same as the number of loaded trains arriving. Therefore, it is not possible to assess the impacts of the rail line from the description of the proposed action.

Although discussed in the references to the EIS, this EIS does not discuss the different options for ownership and operation of the rail line or the possibility that the rail line would be used for other purposes than the proposed action described in the EIS. Use for other types of shipments could increase the impacts of the proposed action above that described in the EIS.

2.1.3.3.3 *Nevada Heavy–Haul Truck Scenario*

Page 2–50
Under this scenario, rail shipments to Nevada would go to an intermodal transfer station where the shipping cask would transfer from the railcar to a heavy–haul truck. The heavy–haul truck would travel on existing roads to the repository.

Comment: DOE has not demonstrated that heavy–haul truck is a feasible option to transport railroad casks to the proposed repository. States are required to enforce weight and size limitations on Interstate System and on routes providing reasonable access to and from the Interstate. The penalty for failure to do so is the withholding of a State's National Highway System apportionment. States may issue permits for overweight and/or oversize vehicles if the load meets the definition of a nondivisible load as defined at 23 CFR 658:

> Nondivisible load or vehicle.
> (1) As used in this part, nondivisible means any load or vehicle exceeding applicable length or weight limits which, if separated into smaller loads or vehicles, would:
> (i) Compromise the intended use of the vehicle, i.e., make it unable to perform the function for which it was intended;
> (ii) Destroy the value of the load or vehicle, i.e., make it unusable for its intended purpose; or

(iii) Require more than 8 workhours to dismantle using appropriate equipment. The applicant for a nondivisible load permit has the burden of proof as to the number of workhours required to dismantle the load.
(2) A State may treat emergency response vehicles and casks designed and used for the transport of spent nuclear materials as nondivisible vehicles or loads.

The decision as to whether or not to treat casks for the transport of spent nuclear materials is left to the discretion of the states. The Federal Highway Administration (FHWA) adopted a single definition of nondivisible loads to apply to both oversize and overweight loads, since "Congress has authorized the States, in identical terms, to issue overweight and oversize permits 'for those vehicles and loads which cannot be easily dismantled or divided [(23 U.S.C. 127(a); section 4006(a) of the ISTEA, 49, U.S.C. app. 2311(j)(1)].'" (58 FR 11455)

Casks designed and used for the transport of spent nuclear materials were added to the definition of nondivisible loads in the preamble to the final rule. FHWA stated, "Spent Nuclear Fuel: The Pennsylvania DOT pointed out that the FHWA informed the American Association of State Highway and Transportation Officials (AASHTO) several years ago that the FHWA regarded overweight casks used to move spent nuclear fuel as nondivisible. This determination was not reflected in the SNPRM (Supplemental Notice of Proposed Rule Making). The casks used to transport spent nuclear materials, especially nuclear fuel, are extraordinarily strong and heavy, both to prevent a release in case the transporter vehicle was involved in an accident and to block radiation that would penetrate lighter materials. Some of these containment devices can make a vehicle overweight even before the nuclear materials are loaded. These vehicles cannot be used for any other cargo or reduced to legal weights without frustrating their purpose. A new provision has therefore been added which essentially states that specially designed casks used to move spent nuclear fuel meet the definition of a nondivisible load." (59 FR 30409)

In the Supplemental Notice of Proposed Rule Making, FHWA stated: "Nonetheless, nondivisible load permits should be used sparingly. Loads which are inherently divisible, including bulk items such as liquids, grain, or cement, would not qualify as 'nondivisible.' Nor would shipments consisting of more than one of a unit item or assembly, which by itself may be nondivisible. In such cases, items can be removed until the load meets the legal limits. Nondivisible load permits are not 'loopholes' in Federal law, and the FHWA expects to see the number of nondivisible lad permits stabilize or even decline in the next few years." (58 FR 11457)

FHWA further clarified the intent of the definition of nondivisible loads with an additional example. "A similar argument has been made, although not in this rulemaking, that tank vehicles weighing more than 80,000 pounds should be eligible for nondivisible–load overweight permits because a partially loaded tank of legal weight is susceptible to cargo surge that can make the vehicle unstable and even cause accidents in turns or emergency maneuvers. By this reasoning, a nondivisible–load overweight permit would be authorized to increase safety. Proponents of this position do not explain the reason tanker operators purchase vehicles that

necessarily exceed applicable weight limits when fully loaded. It is certainly true that tank trucks must be operated with particular care; that is the reason the FHWA's commercial driver's license regulations require drivers of these vehicles to obtain a special endorsement. But the fact is that liquids, like two concrete panels, are easily divisible. If a safety element were added to the definition of a nondivisible load, the concept of nondivisibility could lose all meaning if economic interests were to masquerade as safety issues." (59 FR 11457)

FHWA's intent when adopting the definition of nondivisible loads was to reduce the number of permits issued for overweight and oversize vehicles. Casks for transporting spent nuclear fuel were added to the definition of nondivisible since the design of the cask requires heavy materials for strength and shielding, resulting in some cases, for the need for overweight vehicles. This definition, however, clearly applies to casks that were designed for highway transport, not those designed for rail. In the Supplemental Notice of Proposed Rulemaking, FHWA stated that "shipments consisting of more than one of a unit item or assembly, which by itself may be nondivisible," are not considered nondivisible. DOE can transport the material in casks that meet the requirements for legal weight and size trucks, they are simply proposing to ship "more than one of a unit item or assembly" by putting many more fuel rod assemblies in a cask designed for rail than they could with legal weight truck casks.

In FHWA's example of tank vehicles, they also noted that "the concept of nondivisibility could lose all meaning if economic interests were to masquerade as safety issues." In this case, DOE is not even claiming a safety benefit for the use of rail casks, but rather just one of convenience. Since the use of rail casks is clearly optional, and the material could be shipped in legal weight casks, DOE's proposed use of rail casks transported on overweight and oversize vehicles clearly does not meet the definition of nondivisible load, and does not qualify for an overweight and oversize permit based upon nondivisibility of the load.

Page 2–51
Intermodal transfer station operations would depend on whether the railcars that carried spent nuclear fuel and high–level radioactive waste arrived on dedicated or general freight trains.

Comment: DOE states that there will be operational differences for the intermodal transfer station between the dedicated train and general freight options. The EIS, however, does not contain sufficient information on these differences to allow an evaluation of the difference in impacts between the two options. The difference between staging requirements for the heavy–haul vehicles for the two options should be described. If general freight is used, the EIS states that the "General freight trains would switch from the main Union Pacific track to an existing or newly constructed passing track." The EIS does not state where the existing or newly constructed passing track would be located. If it is located at the intermodal transfer station, this would significantly alter the

design of the station. If a new passing track is constructed at a location independent of the station, this would create potential impacts that have not been evaluated. Even if an "existing passing track" is used, this would probably require the Union Pacific to construct a new passing track for other railroad traffic.

Page 2–53
The station would accept railcars as they arrived (24 hours a day, 7 days a week), but it would normally dispatch heavy–haul trucks during early morning daylight hours on weekdays, consistent with current Nevada heavy–haul shipment regulations.

Comment: The EIS does not contain sufficient information on the schedule of arriving shipments to the station and the schedule on dispatch of heavy–haul trucks from the station to allow an evaluation of the impacts. During winter time, the restriction on travel during daylight hours will significantly limit the time available for travel from the station to the proposed repository. In December, for example, there are only about 10 daylight hours available for travel. Depending on the location of the intermodal transfer station, dispatch of the heavy–haul trucks in the "early morning daylight hours" could result in heavy–haul trucks traveling through the Las Vegas urban area during rush hour.

The EIS does not provide any information on the impact of limiting travel to weekdays. Given the restriction on travel during daylight hours, this means that casks arriving at the station Friday through Monday morning cannot be dispatch until Monday morning. To comply with NRC requirements, a significant number of heavy–haul trucks will have to be dispatched on Monday mornings. The EIS should provide information on this scheduling requirement, and include an evaluation of the impacts of having multiple heavy–haul trucks dispatched during a short time–frame on Monday mornings. Since travel is also prohibited on holidays, this problem will be even worse over three–day holiday weekends.

The number of casks arriving over a weekend could vary significantly depending on whether DOE decides to use general freight or dedicated trains. DOE should state in the EIS its preferred option for the type of service utilized so that an estimate of the number of railcars arriving over a weekend can be made to evaluate impacts of scheduling options. Conceivably, if DOE opts for dedicated train service, the dispatch of trains from shipping sites could be optimized to prevent an excessive number of casks arriving at the intermodal transfer site over weekends.

Page 2–53
Road upgrades for candidate routes, if necessary, would involve four kinds of construction activities: (1) widening the shoulders and constructing turnouts and truck lanes, (2) upgrading intersections that are inadequate for heavy–haul truck traffic, (3) increasing the asphalt thickness (overlay) of some sections, and (4) upgrading engineered structures such as culverts and bridges. The overlay work would include upgrades needed to remove frost restrictions from some road sections.

Comment: The EIS does not contain sufficient analysis of the road upgrade requirements necessary to accommodate these heavy–haul shipments. Southern Nevada experiences extreme heat during the summer. The potential of the heavy–haul trucks causing severe rutting of asphalt surfaces during times of excessive heat should be evaluated. The need to replace asphalt surfaces with concrete to avoid rutting should be evaluated. In areas that experience winter snowfall, snow melt could create saturated roadbed conditions, resulting in pavement damage from heavy–haul trucks. The feasibility of some of the heavy–haul route options depends on upgrades required to remove frost restrictions on some road segments. The upgrades necessary to remove frost restrictions on these roads should also be discussed to justify the feasibility of these options. The possible need to change road surfaces from flexible pavement surfaces (asphalt) to rigid pavement surfaces (concrete) should also be discussed. If rigid pavement surfaces are necessary, this could significantly alter the estimated cost of the heavy–haul option.

The EIS also does not contain adequate information to demonstrate that the heavy–haul trucks will not significantly reduce the expected life of pavement surfaces. Although DOE contractors admit that "A detailed analysis of road wear/damage, based on the current plan for heavy haul, must be performed to provide final estimates for reduction of road life" (*Nevada Potential Repository Transportation Strategy, Study 2, Volume 1*, TRW, February 1996, p.6–8), this analysis was not conducted. Rather, an unsupported assumption that "estimated pavement wear would increase by 10 percent" was used, even though they recognized that "pavement wear would be a major cost driver of the heavy haul truck option" (*ibid* p 6–9).

Page 2–54
Most borrow material for construction could come from existing Nevada Department of Transportation borrow areas, if the State agreed.

Comment: Most road design projects attempt to balance cut and fill requirements during construction of the roads. Therefore, it is not reasonable to assume that borrow material will be available in existing borrow areas for the extensive fill requirements necessary to construct truck climbing lanes and other road improvements. Obtaining fill material from other areas could result in significant impacts not discussed within the EIS.

2.1.5 *Estimated Costs Associated with the Proposed Action*

Page 2–58
The costs would total about $29 billion. This is representative and would vary somewhat, depending on the thermal load, packaging, and transportation scenarios and on the Nevada transportation alternative selected.

Comment: The estimated cost of the proposed action given in the EIS is not consistent with cost estimates prepared for DOE. The estimated cost for rail construction could be significantly higher than the $800 million shown in Table 2–5. For example, DOE contractor cost estimates for rail options are as high as $1.055 billion (*ibid* p 3–11). These costs do not include the cost of rolling stock. In addition, the "costs associated with or supporting DOE program level activities, including **national and Nevada transportation** (emphasis added) program integration, etc." are not included (*Environmental Impact Statement Cost Summary Report*, TRW, June 1999, p. 6).

2.2.2.1 *Potential Rail Routes Considered by Eliminated from Further Detailed Study*

Page 2–70
One new route, Valley Modified, was added in the 1995 Study based on updated information from the Bureau of Land Management on the status of two Wilderness Study Areas that represent possible land–use conflicts for the Valley route in the original evaluation.

Comment: The potential land use constraints for the Valley Modified route have not been eliminated. 1995 Study states "The original Valley route identified in the Preliminary Rail Access Study was considered not feasible due to possible land use conflicts with two BLM–administered areas (Quail Springs WSA NV–050–411 and Nellis WSA NV–050–4R A, B, and C) that were studied for potential designation as Wilderness Areas. Due to uncertainties on the final land use of these areas (based on recent discussion with BLM Las Vegas District personnel), the Valley Modified route was added to the list of alternatives" (*Nevada*

Potential Repository Preliminary Transportation Strategy, Study 1, TRW, April 1995, p. 34). Uncertainty in the final land use for an area does not mean that the land use constraint has been eliminated. These same land use conflicts with the wilderness study areas are reiterated in the 1996 analysis (*Nevada Potential Repository Preliminary Transportation Strategy, Study 2,* TRW, February 1996, p. 2–18).

2.3.3.2 *Potential highway Routes for Heavy–Haul Trucks and Associated Intermodal Transfer Station Locations Considered but Eliminated from Further Detailed Study*

Page 2–72
DOE eliminated the development of a new road for heavy–haul trucks from further detailed evaluation because the construction of a new branch rail line would be only slightly more expensive and transportation by rail would be safer (no intermodal transfers) and more efficient (TRW 1996, page 6—7).

Comment: The analysis cited is based on the constraints for grade and curvature used for heavy–haul vehicles designed for highway use. DOE did not consider the feasibility of adapting trucks designed for heavy–haul in mining activities to the transport of spent fuel casks. These vehicles have the advantage of being able to handle extremely heavy loads (up to 400,000 tons) without the constraints on grade and degree of curvature required for vehicles designed for highway transport. Allowing significantly increased grades, sharper curves, and different surfacing materials (*e.g.* gravel) could significantly reduce the cost of constructing dedicated heavy–haul roads.

2.4.4 *Impacts of Transportation Scenarios*
2.4.4.2 *Nevada Transportation*

Page 2–81
The following conclusions can be drawn from the information in Tables 2–9 and 2–10:

- *Environmental Impacts for each of the 10 implementing alternatives would be small.*

Comment: As discussed in these comments, DOE has failed to develop sufficient information on the description of the proposed action to adequately characterize the environmental impacts for Nevada transportation. In many cases, DOE's impact analysis is also based upon incomplete or missing environmental data due to the cursory analysis conducted on the potential

transportation corridors. DOE has also incorrectly dismissed some identified impacts as minor (*e.g.* impact on wildlife crucial habitats). Therefore, the conclusion that the environmental impacts would be small is not a valid conclusion.

- *With the exception of land use, differences in environmental impacts for the 10 implementing alternatives related to incoming shipments by rail would be small, so environmental impacts do not appear to be a major factor in the selection of transportation mode, route, or corridor in Nevada for incoming rail shipments.*

Comment: As discussed above, DOE has not adequately assessed the environmental impacts of the 10 implementing alternatives. Therefore, it is not possible to draw the conclusion that the difference in environmental impacts are not a major factor in the selection of the transportation mode, route, or corridor. Furthermore, DOE has identified significant differences in land use impacts that should be a major factor in this decision. Therefore, this conclusion is not valid.

Table 2–9 Comparison of impacts for Nevada rail implementing alternatives and for legal–weight truck shipments.

Pages 2–82 through 2–83
Comment: In this table, DOE attempts to provide a comparative summary of the impacts of the Nevada rail versus legal–weight truck alternatives. However, without rail access or heavy–haul shipments, there is no identified means of shipping over 300 shipments of naval fuel to the proposed repository. Therefore, any comparisons in this table are not valid, since they are not based on a complete description of the proposed action and thus, do not include a complete summary of the potential impacts.

2.5.1 *Incomplete or Unavailable Information*

Page 2–86
Some of the analyses in this EIS had to use incomplete information. To ensure an understanding of the status of its information, DOE has identified the use of incomplete information or the unavailability of information in the EIS in accordance with the Council on Environmental Quality regulations pertaining to incomplete and unavailable information (40 CFR 1502.22).

Comment: Most of the analysis of impacts on the Nevada transportation alternatives is based upon incomplete or missing information. This is primarily due to DOE's failure to select a preferred alternative and a reasonable number of alternatives for Nevada transportation. The Council on Environmental Quality regulations cited, however, do not allow DOE to make a NEPA decision based on this incomplete or unavailable information. The regulation cited above states:

> (a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.
>
> (b) If the information relevant or reasonably foreseeable significant adverse impacts cannot be obtained because the overall cost of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:

Since the information needed to make an informed decision on the transportation impacts is neither exorbitant in cost to obtain nor unobtainable, paragraph (a) above is applicable. The information necessary to make an accurate assessment of the Nevada transportation should be obtained and should be included in an environmental impact statement prior to any agency decision.

2.6 *Preferred Alternative*

Page 2–87
DOE has not chosen any transportation mode, corridor, or route as preferred at this time.

Page 2–88
As part of the Proposed Action, the EIS analyzes the impacts of transporting spent nuclear fuel and high–level radioactive waste to the Yucca Mountain site from 77 sites across the United States. As part of this analysis, the EIS includes information, such as the comparative impacts of truck and rail transportation, alternative rail transport corridors, in Nevada, that might not lead to near–term decisions. It is uncertain at this time when DOE would make these transportation–related decisions. If and when it is appropriate to make such

decisions, DOE believes that the EIS provides the information necessary to make these decisions. However, measures to implement those decisions, such as selection of specific rail alignment within a corridor, or the specific location of an intermodal transfer station, or the need to upgrade the associated heavy–haul routes, would require additional field surveys, state and local government consultations, environmental and engineering analyses, and National Environmental Policy Act reviews.

Comment: The Council on Environmental Quality regulations require that the agency preparing the EIS "Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference" (40 CFR 1502.14(e)). DOE admits that it has not chosen the preferred transportation alternative at this time and that when it does, additional "field surveys, state and local government consultations, environmental and engineering analyses, and National Environmental Policy Act reviews" will be required. DOE's own guidance document on the preparation of environmental impact statements also cautions against improper segmentation of connected actions, and directs that connected actions should be considered together in a single NEPA document. It specifically recommends that DOE "include transportation activities as part of the proposed action when the transportation activities would be necessary to make the action happen" (*Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements*, U.S. Department of Energy, Office of NEPA Oversight). The disposal of waste at the proposed repository cannot happen without transportation. Therefore, DOE should have included a preferred transportation alternative within the EIS, and conducted all of the necessary analyses to reach a decision.

3.2 *Affected Environment Related to Transportation*

3.2.2 *Nevada Transportation*

3.2.2.1 *Environmental Baseline for Potential Nevada Rail Corridors*

Page 3–100
DOE expects waste quantities generated by rail line construction and operation to be minor in comparison to those from repository construction and operation. As such, no discussion of existing waste disposal infrastructure along the routes is provided.

Comment: It is true that waste quantities generated by rail line construction and operation should be minor in comparison to those from repository construction and operation. The comparison, however, is meaningless. Most of the rail construction would take place far from the repository, much of it in remote, sparsely populated areas. Waste generated during the rail construction will undoubtedly not be hauled to the same disposal site as waste generated during repository construction. Rather, it will be disposed in facilities along the corridor.

What is significant, therefore, is the volume and type of waste generated by rail line construction and operation in comparison to the capacity of waste disposal facilities along the various corridors. Given the remote, sparsely populated areas crossed by the proposed rail line, solid waste disposal facilities probably do not have sufficient capacity to handle waste generated during rail construction. Many times construction waste is not compatible with the waste handling facilities at existing sites. (Note: this same discussion applies to the intermodal transfer station and heavy–haul routes.)

Page 3–100
DOE evaluated the potential impacts of the implementing alternatives in regions of influence for each of the subject areas listed above. Table 3–32 defines these regions, which are specific to the subject areas, in which DOE could reasonably expect to predict potentially large impacts related to rail line construction and operation.

Land Use and Ownership	*Land areas that would be disturbed or whose ownership or use would change as a result of construction and use of branch rail line.*

Comment: The region of influence for land use is too narrowly defined. Impacts to land use may occur that do not result in a change of ownership or use. For example, bisecting a ranch with a rail line will have substantial impacts on that operation. It will be difficult for the rancher to move equipment and livestock from one side of the rail line to the other. Because of the difficulty in operating the ranch that is now split into two pieces, the value of the ranch will be reduced. This will have significant impact on the rancher without changing the ownership or the use of the land. The region of influence for land use should include all of the land under the ownership or lease of agricultural operations crossed. (Note: this same discussion applies to the intermodal transfer station and heavy–haul routes.)

Biological Resources	*Habitat, including jurisdictional wetlands and riparian areas inside the 400–meter wide corridors; habitat, including jurisdictional wetlands outside the corridor that could be disturbed by rail line construction and operations; habitat, including jurisdictional wetlands, and riparian areas that could be affected by permanent changes in surface–water flows; migratory ranges of big game animals that could be affected by the presence of a branch rail line.*

Comment: The region of influence for biological resources is too narrowly defined. Habitat outside the corridor is considered in the regional of influence only if that habitat is disturbed by rail line construction and operations. Several of the corridors cross or pass near to crucial big game habitat. Human activity is known to reduce the value of crucial habitat, particularly crucial winter habitat. Frequent trains passing through or near to crucial habitat could significantly reduce the value of that habitat even though the habitat was not physically "disturbed" by construction or operation. The region of influence for biological resources should include all habitat potentially affected, not just disturbed, by construction and operation of the rail line (Note: this same discussion applies to the intermodal transfer station and heavy–haul routes.)

3.2.2.2 *Heavy–Haul Truck Route and Intermodal Transfer Station Environmental Baseline*

3.2.2.6 *Socioeconomics*

Page 3-134
Section 3.1.7 contains socioeconomic background information on the three counties (Clark, Lincoln, and Nye) most involved in the heavy–haul routes.

Comment: The section referenced contains very little information on the expected future population of these areas during the period of operations. To accurately predict the impact of heavy–haul operations, future population projections are necessary. These projections are required in order to forecast traffic volumes on the affected highways. Without these projections, the impact of operations on the level–of–service for the affected highways cannot be assessed. In the Las Vegas urban area, the area where growth is expected to occur given the proposed construction of urban area bypasses should also be projected. Highway improvements are known to effect growth patterns in urban areas. Without projecting the change in growth patterns associated with

the urban bypasses, the projected traffic volumes on these roads cannot be predicted.

3.2.2.2.11 *Existing Traffic on Candidate Routes for Heavy–haul Trucks*

Page 3–139
The description of the affected transportation environment characterizes routes in terms of traffic volume and roadway capability. The potential for congestion and other problems on a roadway is expressed in terms of levels of service.

Roads outside the Las Vegas metropolitan area are generally level of service A or B; roads inside the Las Vegas metropolitan area are generally level of service E or F. Table 3–47 lists current levels of service on potential heavy–haul routes (excluding the planned Las Vegas Beltway).

Comment: Current levels of service are of little value in assessing the impact of heavy–haul operations on traffic flow and safety. The projected baseline should include predicted levels of service during the time frame of heavy–haul operations. This prediction should be based upon reasonably expected future highway improvements and projected population growth.

The implication of noting that the existing levels of service exclude the planned Las Vegas Beltway is that the level of service is expected to improve when the beltway is completed. This very well might not be the case. Studies have demonstrated that in growing urban areas, growth takes place along transportation corridors, negating any improvement in traffic flow from route improvements. This was recently demonstrated for the Denver urban area where studies of an extensive improvement planned for the highways in that area predict insignificant change in traffic flow.

6. *Environmental Impacts of Transportation*

6.1.2 *Overview of Nevada Transportation Impacts*

6.1.2.1 *Land Use*

Page 6–8
Land–use impacts would be greatest for the mostly rail scenario, with disturbed land areas ranging from about 5 square kilometers (1,200) acres for the Valley Modified route to 19 square kilometers (5,000 acres) for the Carlin route.

Comment: DOE has not accurately identified or assessed the land–use impacts of the Nevada Transportation alternatives. Even where DOE has identified land–use impacts, DOE has understated the nature and severity of the impacts. The failure by DOE to accurately describe the proposed action also prevents an adequate assessment of land–use impacts. For example, the land–use impacts associated with the development of ballast and sub–ballast quarries, solid waste disposal facilities, construction lay–down areas, and construction staging areas can not be assessed until these areas are identified.

The conclusions regarding land–use impacts in the DEIS rely primarily on disturbed acreage. Although this is one measure of land–use impacts, it is not the only one. For linear facilities such as a rail line, an assessment of land–use impacts should also include an evaluation of the impacts of bisecting current and future land–uses. As discussed above in the comment on Section 2.1.3.3.2 Nevada Rail Scenario, splitting an area with a rail line can have significant impacts on the entire area, not just the area within the right–of–way. This is particularly true for ranching operations. DOE has not assessed this type of land–use impact in the EIS.

DOE has identified a number of land–use conflicts with the proposed rail line, but has not accurately characterized the impact of these conflicts. For example, rail potential corridors cross the Simpson Park Habitat Management Area (Carlin) , the Old Spanish Trail/Mormon Road special recreation management area (Jean), Wilderness Study Areas (Valley Modified) and the Desert National Wildlife Range (Valley Modified). A rail line through these special land–use areas would have significant impact on the purpose of these special areas. The EIS does not even discuss these impacts. It is particularly difficult to understand why DOE has not eliminated the Caliente–Chalk Mountain alternative. The U.S. Air Force has unequivocally stated that this alternative is unacceptable due to its impacts on the Nellis Air Force Range.

Proposed rail line corridors also cross areas of potential future community growth. Although DOE identifies these areas, the EIS does not contain an assessment of the impacts of this conflict on future community growth patterns. The area of particular concern is the impact of the proposed Valley Modified route on growth in the north Las Vegas urban area.

Many of the areas crossed by potential rail corridors are currently remote, undeveloped areas. Much of the area is currently roadless, including Wilderness Study Areas. Regardless of the decision by the land management agency regarding classification as wilderness, construction of a rail line through a

remote, roadless area will have land–use impacts. These changes in land–use should be identified and assessed.

From a land–use perspective, the only rail alternative that does not have serious land–use conflicts is the Caliente corridor. Even this corridor could impact the Nellis Air Force Range. All other rail alternatives cross or impact areas designated as special purpose land–use. These conflicts are summarized below:

Caliente:	Requires use of land on Nellis AF Range. Alternatives cross difficult terrain.
Carlin:	Requires use of land on Nellis AF Range. Alternatives cross difficult terrain. Bates Mountain Antelope Release Area Simpson Park Habitat Management Area
Caliente/ Chalk Mountain:	Traverses Nellis AF Range, which is unacceptable to AF.
Jean:	Impacts Pahrump potential community growth Old Spanish Trail/ Mormon Road special recreation management area Adjacent to Stateline Wilderness Area
Valley Modified:	Encroaches on the Desert National Wildlife Range. Impacts community growth in the north Las Vegas urban area Crosses Nellis A, B, & C and Quail Spring WSA Impacts Nellis AFB small arms range. Impacts Indian Springs Auxiliary Field facilities.

DOE lists the Caliente/Chalk Mountain corridor as a non–preferred alternative, based upon the Air Force's statement that no route that traverses Nellis Air Force Range is acceptable. Based upon this comment, the route (and the associated heavy–haul route) should have been eliminated from the alternatives included in the EIS, and listed in Section 2.3 as an alternative considered but eliminated for detailed study.

6.1.2.3 *Hydrology*

Page 6–10

Surface–water impacts during construction would be avoided by implementing good management practices to prevent and mitigate spills of pollutants and would avoid, minimize, or otherwise mitigate possible changes to stream flows. Therefore, DOE does not anticipate impacts to surface waters from the construction of a rail or heavy–haul implementing alternative.

Potential for groundwater impacts would be limited. There would be the potential for temporary withdrawals of water from groundwater sources during the construction of a branch rail line or upgrade to highways and construction of an intermodal transfer station.

Page 6–45
If DOE selected rail to transport spent nuclear fuel and high–level radioactive waste to the Yucca mountain site, it would also select one of the five routes. DOE would then prepare a more detailed floodplain/wetlands assessment of the selected alternative. The assessment in Appendix L presents a comparison of what is know about the floodplains, springs, and riparian areas and at the three alternative intermodal transfer station sites and along their associated heavy–haul routes. In general, wetlands have not been delineated along the alternative intermodal transfer station sites.

Page L–18
Potential rail routes would cross many small and some large, washes.

Based on current information, springs and riparian areas that may have associated wetlands occur within three of the rail corridors (Caliente, Carlin, and Caliente–Chalk Mountain.

Comment: DOE has not adequately studied the potential surface water impacts of either the rail or the heavy–haul alternative. The discussion on wetlands contained in Appendix L for all of the rail alternatives contains the statement, "no field searches or formal delineations of wetlands have been conducted along this route." Wetlands have also not been delineated for the intermodal transfer station sites. Some of the rail corridors are known to cross or be near to significant springs, groups of springs, streams designated as riparian areas, or reservoirs associated with wetlands. Wetlands and riparian areas are a valuable resource in Nevada. Simply stating that impacts will be mitigated is insufficient.

The discussion of groundwater impacts is limited to impacts associated with groundwater withdrawals for construction activities and from infiltration of pollutants from potential spills during construction and operation. Most of the rail corridors cross rugged terrain where there will be significant cuts required. These cuts could intercept groundwater flow. DOE has not provided sufficient information on the actual routes and the location and depth of cuts to assess these potential impacts.

6.1.2.4 *Biological Resources and Soils*

Page 6–10
Loss of habitat from construction of a branch rail line would be the greatest potential impact to biological resources, potentially affecting the desert tortoise, a threatened species.

Page 6–46
Game and Game Habitat. Each candidate rail corridor would cross or be near [within 5 kilometers (3 miles)] several areas the Bureau of Land Management and the Nevada Division of Wildlife have designated as game habitat. Construction activities in these areas would result in a loss of some habitat. Each rail corridor has the potential to disrupt movement patterns of game animals. The design of fences, if built, along the rail corridor, would accommodate the movement of these animals. Large animals including game species (elk, bighorn sheep, mule deer, etc), wild horses, and burros probably would avoid contact with humans at construction locations and would temporarily move to other areas during construction. Numerous special status species occur along each of the proposed branch rail lines. Construction of a branch rail line could lead to habitat loss and fragmentation for the special status species, as well as to mortality of individuals.

Comment: DOE has significantly understated the impact to biological resources. Loss of habitat would not be limited only to the physical loss of habitat due to the construction of the rail line. The operation of the rail line would reduce the value of habitat crossed or near to the line, resulting in significantly greater loss in habitat than just the area physically within the rail line right–of–way.

All of the rail corridors except the Valley Modified cross and are near to critical habitat for many species of wildlife. Critical habitat is absolutely necessary for wildlife. Human activity, such as the operation of a rail line, in or even near critical habitat can seriously degrade the value of that habitat for wildlife. This is especially true of linear facilities, such as a rail line, that pass through habitat areas. Without undisturbed access to critical habitat, the wildlife using that habitat may abandon large areas of year–round habitat. Critical habitat crossed by or near to rail corridors includes bighorn sheep crucial winter range, mule deer crucial winter range, pronghorn winter range, sage grouse strutting areas, sage grouse nesting areas, chukar crucial habitat and quail crucial habitat.

The Carlin and Jean corridors also cross migration corridors for big game. Linear facilities such as rail lines can significantly impact the movement of big game. This is particularly true in areas where steep cuts or fills are required. The Jean corridor also crosses a potential migration corridor for bighorn sheep from winter range in the Devils Hole Hills to historic but currently unoccupied habitat at the northwest end of the spring Mountains. Although currently not used, the disruption of this migration corridor would be a significant impact. Bighorn sheep are particularly susceptible to disease. An unoccupied habitat area represents the potential to establish another herd unit that could provide greater protection for the continued recovery of the bighorn sheep.

The *Environmental Baseline File for Biological Resources* (TRW 1999k) lists the following crucial habitats within each of the 400 meter wide rail corridors:

Caliente:	Bighorn Sheep Crucial Winter Habitat (Cedar Range), Mule Deer Crucial Winter Range (Cedar Range), Quail Crucial Habitat in Meadow Valley
Carlin:	3 Sage Grouse Strutting Areas (Grass Valley, Rye Patch Canyon, and Monitor Valley), Sage Grouse Nesting Area (Monitor Valley), Pronghorn Winter Range, Ungulate Migration Corridor Between Simpson and Toquima Ranges, Bates Mountain Antelope Release Area, Simpson Park Habitat Management Area
Caliente–Chalk Mountain:	Bighorn Sheep Crucial Winter Habitat (Cedar Range), Mule Deer Crucial Winter Range (Cedar Range), Crucial Areas for Quail (Meadow Valley)
Jean:	Crucial Bighorn Sheep Winter Habitat (Wilson Pass) and Winter Habitat (west of Wilson Pass), Bighorn Sheep Migration Corridor and Potential Migration Corridor, Crucial Chukar Habitat (Goodsprings), Crucial Areas for Quail (Goodsprings, Pahrump, Johnnie), and Mule Deer Winter Habitat

Although the Valley Modified corridor does not contain crucial habitat, it does cross the Desert National Wildlife Refuge (DNWR) in several places, including the Corn Creek Springs area. The DNWR was set aside primarily for desert bighorn sheep. It also provides habitat for mule deer, other desert mammals, and migratory birds. The Corn Creek area contains an environment filled with trees, pasture and spring–fed ponds which attract a large number of migrating birds not common to the desert environment. The ponds are home to the endangered Pahrump poolfish.

Each of the corridors contain many additional biological resources within the corridor or within 5 kilometers of the corridor. Although these resources are identified in the *Environmental Baseline File*, the DOE makes no attempt to quantify the impacts of the rail line on most of these resources.

The EIS does not contain an assessment of the impact of fencing on wildlife. This is inexcusable, since the impact of fencing was identified by the Bureau of Land Management as a major issue (TRW 1999k, p 5–1).

Page 6–11
The potential impacts from upgrading Nevada highways for heavy–haul truck use would be small because modifications to roads would occur in previously disturbed rights–of–way.

The amount of upgrade required varies significantly between the various heavy–haul route options. Portions of the Caliente–Chalk Mountain route will require significant upgrades, resulting in much more impact than some of the other route segments. Realigning roads to avoid significant grades and to improve curvatures will impact areas outside of current rights–of–way. The impact of the heavy–haul alternative on critical habitat for wildlife will be similar to that discussed above for the rail line alternative.

6.3.3.1 *Impacts Common to Nevada Heavy–Haul Truck Implementing Alternative*

Page 6–86
Even with the highway upgrades, heavy–haul trucks would cause delays for other vehicles because of their size and slower travel speeds. On most of the highways in Nevada that heavy–haul shipments would use, traffic volumes are classified as level of service Class A, which means that traffic flows freely without delay. The addition of 11 one–way trips each week to the traffic flow on these highways would not lead to a change in the average level of service. However, some traffic in lanes traveling with the vehicles would experience delays and short queues could form between turnout areas. In congested areas such as the Las Vegas metropolitan area, where the level of service for the planned Las Vegas Beltway could be Class C or lower during non–rush–hour times, large slow–moving vehicles with their accompanying escort vehicles could present a temporary but large obstruction to traffic flow. Because disruptions on congested highways often continue after the removal of the cause, the

duration of the traffic flow disruption would be longer than the time the vehicle would travel on the highway.
Comment: The conclusions regarding changes in level–of–service are not supported by any analysis. The extreme length of the heavy–haul vehicle and its slow speed will undoubtedly result in a significant impact to traffic flow on all the highways considered. This is particularly true in the Las Vegas metropolitan area. The EIS does not include any analysis of accident rates for this type of vehicle, or of accident rates for other vehicles caused by the traffic delays created by the heavy–haul vehicle.

Heavy–haul shipments would be dispatched from the intermodal transfer station during early–morning hours (EIS, p2–53). For the Apex/Dry Lake and the Jean/Sloan routes, this will result in heavy–haul vehicles traversing the Las Vegas urban area during morning rush hour. If the level–of–service for the Las Vegas Beltway during non–rush–hour traffic is Class C or lower, then it is reasonable to asume that the level–of–service during rush hour would be D or F. Putting the heavy–haul vehicle in traffic experiencing this level–of–service is unacceptable.