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May 25, 2004

Ms. Robin Sweeney
EIS Document Manager
Office of National Transportation
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1551 Hillshire Drive, MS 011
Las Vegas, Nevada 89134

Re: State of Nevada Comments on DOE's Notice of Intent to Prepare and Environmental Impact Statement for Alignment, Construction, and Operation of a Rail Line to a Geologic Repository at Yucca Mountain, Nye County, Nevada

Dear Ms. Sweeney:

Attached please find the State of Nevada's comments on the above-referenced Notice of Intent that was published in the Federal Register on April 8, 2004. Please note the document includes a number of Attachments that are incorporated by reference and made part of the overall State comments.

If you have questions regarding these comments, please contact me or Joseph Strolin, Planning Division Administrator for the Agency for Nuclear Projects, at 775-687-3744.

Sincerely,

Robert R. Loux
Executive Director

RRL/cs

Attachment

cc Governor Guinn
Attorney General Brian Sandoval
Brian McKay, Nevada Commission on Nuclear Projects
Nevada Congressional Delegation
Affected Local Governments and Tribes

STATE OF NEVADA COMMENTS
ON THE U.S. DEPARTMENT OF ENERGY'S NOTICE OF INTENT
TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT FOR THE
ALIGNMENT, CONSTRUCTION, AND OPERATION OF A RAIL LINE TO A
GEOLOGIC REPOSITORY AT YUCCA MOUNTAIN, NYE COUNTY, NEVADA
[Federal Register / Vol. 69, No. 68 / Thursday, April 8, 2004, 18565 – 18569]

Prepared by
The Nevada Agency for Nuclear Projects¹
Office of the Governor
May 25, 2004

Introduction

The State of Nevada (Nevada) submits these comments in response to the U.S. Department of Energy (DOE) Record of Decision (ROD) and DOE Notice of Intent (NOI) published in the Federal Register, April 8, 2004. In the ROD, DOE selected the mostly rail scenario for transportation of SNF and HLW to the proposed repository site at Yucca Mountain, Nevada. In the ROD, DOE also selected the so-called Caliente corridor as the preferred route for construction of a new rail line from the existing Union Pacific Railroad mainline to Yucca Mountain. In the NOI, DOE announced its intent to prepare an environmental impact statement (EIS) for the selection of a rail alignment, and the construction and operation of a rail line to Yucca Mountain, within the Caliente corridor.

Throughout these comments, Nevada refers to the environmental document to be prepared by DOE as the Caliente Rail Draft EIS or as the Draft EIS. Nevada has adopted this nomenclature to emphasize its contention that DOE has prematurely and inappropriately selected the Caliente rail corridor in violation of the National Environmental Policy Act (NEPA) and the implementing regulations promulgated by the U.S. Council on Environmental Quality (CEQ). Nevada specifically directs these scoping comments to issues and impacts that DOE must evaluate in the Draft EIS, so that the affected public may better participate in the Draft EIS review and comment process.

Throughout these comments, Nevada makes frequent reference to the Repository Final EIS (also referred to as the Final EIS or FEIS), published by DOE in February 2002, for the proposed Yucca Mountain repository site. Nevada uses the terms mostly rail scenario and mostly legal-weight truck scenario as these terms are defined in the Repository Final EIS. [FEIS, Pp. 6-35, J-10] Nevada uses the terms rail alignment, rail spur, and rail line interchangeably in referring to the railroad that DOE proposes to build and operate.

¹ Other Nevada State agencies contributing to these comments include: The Department of Agriculture, The Division of Environmental Protection, the Division of Minerals, the Division of State Lands, The Commission for the Preservation of Wild Horses, the Nevada Natural Heritage Program, the Division of Water Resources, The Department of Transportation, The Nevada Highway Patrol Division, The Division of Emergency Management, The Nevada State Health Division, the Public Utility Commission, and the Office of the Attorney General.

Inadequate Comment Period and Failure to Conduct a National Scoping Process

The choice of the Caliente, Nevada rail spur alternative will have wide-reaching implications for shipments of SNF within Nevada and around the country. The decision to construct a rail spur at Caliente will unavoidably affect the entire HLW transportation system, resulting in greater numbers of shipments along certain rail routes and through certain states and cities and lesser numbers of shipments through other areas. These system-wide differential impacts have never been adequately assessed, and the scoping process for the proposed rail spur must be able to encompass the full range of impacts and impacted areas.

The only way for DOE to adequately identify and assess the full range of impacts that are likely to occur is to provide for an adequate scoping period. Nevada believes that ninety days is the minimum amount of time required to allow the public and affected parties to understand and evaluate the proposed action and prepare comments. The comment period provided in the NOI, even with the additional week that was added subsequent to the publication of the original Notice, amounted to only 52 days and does not constitute a sufficient amount of time for adequate public review and comment. (Ironically, in extending the comment period from May 25th to June 1st, DOE functionally added only three actual work days to the period, since the extension now encompasses the Memorial Day weekend.)

Since states and cities around the country also stand to be substantially affected by DOE's choice of a Nevada rail spur, Nevada contends that DOE should have scheduled scoping meetings in strategic locations nationwide, not just in Nevada. Such locations should be chosen based on an analysis of how shipments from reactors and generator sites would be routed to a Caliente rail spur. There should have been a sufficient number of such meetings to adequately cover key impacted states/cities throughout the Yucca Mountain transportation system.

The NOI is Premature, Inappropriate, and in Violation of NEPA

The DOE NOI is both premature and inappropriate, and it is reflective of the inverted nature of DOE's entire approach to transportation planning. Before making any decision regarding rail corridors and in Nevada, DOE should have undertaken a national transportation analysis that evaluated differential impacts of various modes and modal mixes. From that analysis, a decision could be made as to what the preferred mode of shipments will be. Once the mode decisions were made and adequately supported, then DOE should have undertaken a national routing analysis to look at the differential impacts of various route alternatives, taking into consideration differing impacts caused by differences in routing schemes based on which rail and access routes are available in Nevada.

Only after such a national transportation analysis is completed can DOE assess which rail access route (if any) in Nevada is preferred and justify the issuance of an NOI for an EIS

to construct and operate a rail spur. To do otherwise is unacceptable and, Nevada officials believe, a violation of the requirements of the National Environmental Policy Act (NEPA).

DOE's Inappropriate and Illegal Implementation of NEPA and CEQ Regulations

The State of Nevada objects to the NOI because, in assigning to itself "lead agency" status for this massive transportation project, DOE appears to have preempted the exercise of exclusive regulatory authority by the Surface Transportation Board (STB) over this new rail line and the activities proposed by DOE in the NOI. The April 22, 2004 letter from Nevada Attorney General Brian Sandoval to James L. Connaughton, Chairman, U.S.C.E.Q. is included at [Attachment I](#) and incorporated by reference into these comments.

Long-standing precedent establishes that the US Surface Transportation Board (STB) has exclusive jurisdiction and prior approval authority over activity proposed by DOE, i.e. the construction and operation of rail lines within the national railroad system. 49 USC 10901. STB jurisdiction includes primary responsibilities regarding such activity under the National Environmental Policy Act (NEPA) that may not be delegated to others. *Harlem Valley Transportation Association v. Stafford*, 500 F.2d 328, 336 (2nd Cir. 1974); *State of Idaho v. ICC*, 35 F.3d 585, 595 (D.C. Cir. 1994).

Despite issuing this NOI, DOE cannot, and should not, now attempt to pre-empt the STB's appropriate role of "lead" agency for evaluating the environmental impacts of the railroad activity proposed. In order to prevent DOE's efforts to do so, the State of Nevada has initiated administrative remedy before the Council on Environmental Quality (CEQ), the agency charged with oversight of Federal agencies procedures on NEPA implementation. (See Attachment I)

Apart from the obvious failure to make application to the STB for prior approval of the NOI's proposed rail activity here at issue, DOE has consistently failed to even consult with STB regarding the transportation activity proposed in DOE's *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV* (FEIS) upon which this NOI relies.

Because of the exclusive jurisdiction and special expertise of the STB on interstate rail activity, this NOI is not a lawful undertaking under the requirements of CEQ regulations. 40 CFR 1501.5.

The testimony of Roger Norber, Chairman of the Surface Transportation Board, before the U.S. House of Representatives Committee on Transportation and Infrastructure Subcommittee on Railroads in Las Vegas on March 5, 2004 is incorporated into these comments by reference and included as [Attachment II](#).

Other Agency Involvement - Necessary Federal and State Agencies Are Omitted.

In the “other agency involvement” section of the NOI, DOE continues to ignore the obvious responsible agencies in transportation. Although the STB is now included, DOE fails to include the Federal Railroad Administration (FRA) - responsible for railroad operations and safety, the U.S. Department of Transportation’s Research and Special Programs Administration (DOT/RSPA) - responsible for rules for transportation of hazardous materials (HMR), and the Department of Homeland Security (DHS) - responsible for security of transportation modes, systems and infrastructure.

In addition, there are numerous State of Nevada agencies with statutory, regulatory, or oversight roles and responsibilities for rail and highway activities contemplated by the NOI. These include, but are not necessarily limited to, the Nevada Public Utility Commission (rail regulations), the Nevada Department of Transportation, the Nevada Department of Public Safety (especially the Nevada Highway Patrol and the Nevada Division of Emergency Management), the Nevada Division of Health, the Nevada Department of Conservation and Natural Resources (especially the divisions of Environmental Protection, State Lands, State Parks, Wildlife, etc.), the Nevada Department of Museums, Library and Arts (Historic Preservation Office), and others. The Draft EIS must assess roles of and impacts to each of the affected State of Nevada agencies.

Consultation and Communication

The Draft EIS should clearly define the communication mechanisms to be employed between DOE and all of the identified stakeholders, especially BLM, the State of Nevada and the affected local jurisdictions.

The comment process used by DOE at the scoping meetings, the individual delivery of oral comments to a court reporter, had the affect (intended or unintended) of concealing the information provided by each commenter from the other meeting attendees. All comments received by DOE during the public scoping meetings should be transcribed verbatim and made public immediately (preferably via a DOE web site). DOE should publish the verbatim comment transcripts as an appendix to the Scoping Report. The Caliente Rail Draft EIS must contain a comment-response section that clearly articulates each comment received, together with the DOE response.

Not Business as Usual

The proposed Caliente rail spur is not, and must not be treated as, simply another rail line. The purpose for which DOE is proposing to construct and operate the rail line is unique and has the potential to negatively and substantially impact people and the environment in an unprecedented way (see [Attachment III](#) for a more detailed description of the use to which the rail spur would be put). If DOE ultimately constructs a rail access route to Yucca Mountain using the Caliente route, a rail spur over 300 miles long would be built to carry SNF and HLW from nuclear power reactors and other facilities around the country. At least 70,000 metric tons and potentially more than 120,000 metric tons of this dangerous material would be transported along this corridor, requiring thousands of

shipments over a period spanning 40 years or more. An accident involving release of this material could result in massive and long-lasting environmental damage. Even without an accident, repeated exposures to routine radiation emitted by shipping containers over long periods of time can result in negative health consequences. The mere fact that the line will be used as a nuclear waste transportation corridor also has the potential to stigmatize both the spur line itself and surrounding areas, resulting in potential impacts to property values and other economic consequences for users of adjacent or nearby lands. The Draft EIS must assess impacts resulting from the special nuclear nature of the proposed action and alternatives.

The proposed Yucca Mountain project has created major and sustained conflict between the State of Nevada and the federal government over the years and is likely to continue to be a major source of controversy in the future. It is critically important for DOE to recognize that any action involving a construction and operation of a rail access route to Yucca Mountain cannot be handled in a “business-as-usual” fashion.

Proposed Action/Project Description

In the Draft EIS, DOE must provide detailed information on the proposed rail alignment(s), the proposed rail construction plan, and the proposed rail operations plan. The information should be sufficiently detailed to allow potentially affected individuals to determine the impacts of the proposed rail line on all privately-owned and leased lands traversed by the alignment. The information should also be sufficient to assess any significant direct or indirect impacts upon private lands, or private economic activities on leased lands, located within 5 miles of the alignment, whether traversed by the alignment or not.

It is critically important that DOE present detailed rail alignment design maps and plan views, including vertical profiles, in the Draft EIS. The alignment maps and plan views, at a horizontal scale of 1 inch = 500 feet and a vertical scale of 1 inch = 50 feet, must clearly show the relationship to the existing transportation network (including all highway and road crossings) and the right-of-way according to ownership and land-use. Detailed information must be provided on grades and curves; earthworks, borrow pits and spoils pits; and bridges, grade-crossings, underpasses and over-passes. The Draft EIS must identify any fences and water wells that might be associated with rail construction and operation.

For a rail line of approximately 320 miles, documentation of these design maps and plan views will likely require several hundred oversize pages. DOE should provide this information as a hardcopy appendix to the Draft EIS. DOE should also make this information available in PDF format on CD-ROM and on a DOE internet website. DOE should consider presenting this information in additional formats compatible with public domain GIS software, such as ArcExplorer from ESRI.

The proposed connection to the existing rail line should be described in detail. This includes a description of the connections required to accommodate rail traffic from both directions, overpass structures required, etc.

In addition to the turnouts, other facilities may be required, such as a secure yard constructed at this location to facilitate temporary storage of cask cars. Additional terminal facilities that may be constructed at this location include an operations center, locomotive shop, maintenance headquarters, automotive vehicle maintenance facility, emergency station, dormitory, fueling station, and railroad car repair shop. These should also be described in detail.

The right-of-way required for the new line should be described in detail, including the minimum width and increased right-of-way widths necessary in areas of cut and fill slopes.

Location and description of all proposed grade crossings must be provided, including at grade crossings and grade separate crossings (specifying type of crossing, such as road overpass, road underpass, cattle underpass, etc.). For at grade crossings, the description should include the type of traffic control/warning devices to be installed (sign only, lights only, lights and arms, etc.).

Access roads that parallel the tracks for service and maintenance should be described, including points of access for the roads, methods of preventing unauthorized use of the access roads, and the frequency of use for the roads.

Detailed information on the finished track structure is critical for assessing impacts on humans, livestock, and wildlife. The top of rail elevation above the adjacent land surface, and the height and slope of the ballast, are details of particular importance. The top of rail elevation may vary from less than one foot to ten feet or more.

Detailed information on train speeds is also necessary for assessing impacts. Previous DOE contractor studies have stated that maximum train speeds on heavy grades and sharp curves could be less than 20 miles per hour upgrade and 25 miles per hour downgrade, while maximum speeds on other route segments could be 60 miles per hour.

The description of the proposed action must clarify if and how DOE will share use of the rail line with other governmental and non-governmental entities. Previous DOE studies have stated that the rail line will be shared use with the Nevada Test Site. The discussion of shared uses should include the safety implications of shipping other hazardous materials, such as military munitions, civilian explosives, and petroleum products.

The description of the proposed action must clarify how DOE intends to operate the rail line. Previous DOE studies have stated that the rail line would be operated under contract by a short-line operating company, and that the operating company would be required to meet FRA requirements for maintenance, operations, and safety. The discussion of operations should address the implications of the FRA 12-hour time limit for crew service.

The description of the proposed action should also include a discussion of system components not required under Federal Railroad Administration regulations, but which would enhance operational safety and security. In particular, the Draft EIS should

evaluate the costs and benefits of a mid-route way station for crew changes, maintenance, security and emergency response; and installation of a centralized traffic control (CTC) system to direct the movement of trains on the line.

The Proposed Action: Shipment Characteristics

In the Draft EIS, DOE must provide updated information on the radiological characteristics of the SNF and HLW that would be shipped on the proposed rail line. Since publication of the Repository Final EIS in February, 2002, several developments have occurred that could significantly change the radiological characteristics of the SNF and HLW shipped to the repository. Developments regarding civilian SNF include: extension of current reactor operating licenses; utility fuel management practices that result in higher-burnup SNF; and utility interpretation of the Standard Contract in a manner that will force DOE to abandon plans for shipping oldest fuel first (OFF). These developments could result in rail shipments of five-year cooled, high-burnup SNF in large, transport-only casks (casks without welded internal canisters). Additionally, DOE has proposed changes in the definition of HLW that could alter the characteristics of DOE shipments to the proposed repository. Therefore, the Draft EIS must provide thoroughly updated information on shipment characteristics, both for logistics analysis, and for risk assessment. Expected changes in the radiological characteristics of SNF and HLW could significantly increase the human health and economic consequences of severe transportation accidents and incidents of terrorism and sabotage. DOE cannot adequately address this issue by adopting by reference the out-of-date SNF and HLW inventory information provided in the Repository Final EIS.

The Proposed Action: Shipment Numbers

In the Draft EIS, DOE must provide accurate and updated information on the expected number of rail and truck shipments to the proposed repository. DOE must reexamine both the bounding scenario approach (mostly rail and mostly legal-weight truck) and the site-specific inventory and transport capability assumptions used to estimate rail and truck shipments in the Repository Final EIS, published in February, 2002.

In the Repository Final EIS, the DOE mostly rail scenario was intended to bound or bracket the maximum percentage of rail shipments reasonably achievable from 77 sites. Under the mostly rail scenario, DOE assumed that up to 71 sites could ship solely by rail, and 6 sites could ship partly by rail and partly by legal-weight truck, resulting in a maximum reasonable estimate of 9,646 rail cask-shipments and 1,079 truck cask-shipments over 24 years. The mostly rail, and the corresponding mostly truck, shipment estimates represented the "the two extremes in the possible mix of transportation modes." [FEIS, p. 6-35] These numbers were never intended to represent the actual number of shipments that would occur, "because, more than 10 years before the projected start of operations at the repository, it [the analysis] cannot accurately predict the actual mix of rail and truck transportation that would occur from the 77 sites to the repository." [FEIS, p. J-10]

DOE spokespersons have misrepresented these shipment estimates by stating that only 175 combined rail and truck shipments per year would be needed to move the entire waste inventory from reactors around the country to Yucca Mountain. This misrepresentation is repeated in the ROD published in the Federal Register on April 8, 2004, where DOE states that “about 9,000 to 10,000” rail casks in “about 3,000 to 3,300 total shipments” would “travel on the nation’s rail network over the anticipated 24-year period,” in addition to “about 1,000” legal-weight truck shipments. [Page 18559]

In fact, the actual modal mix and number of shipments, under the mostly rail scenario, cannot be accurately predicted based on the information presented in the Repository Final EIS. The information presented supports a wide range of possible modal mix percentages and shipment number estimates. For example, if the six reactors assumed to make partial shipments by legal-weight truck are instead assumed to make all of their shipments by legal-weight truck, there would be 9,460 rail and 2,327 truck cask-shipments over 24 years. Further, if the 26 reactors which cannot currently load rail casks or ship directly by rail, are assumed to make all of their shipments by legal-weight truck, there would be 7,390 rail and 14,201 truck cask-shipments over 24 years.

The Draft EIS must thoroughly reexamine the potential number of cask shipments and total shipments (assuming multiple rail cask shipments per train) under the mostly rail and mostly legal-weight truck scenarios. Unless DOE can accurately predict the actual number of rail and truck shipments, based on a site-by-site analysis, the shipment numbers must be honestly presented as a range of estimates.

The Draft EIS must also estimate the number of shipments that could occur under the recently announced (March 10, 2004) DOE alternative of shipping legal weight truck casks by rail to an intermodal transfer facility in Nevada. Based on the shipment estimates used in the Repository Final EIS, there could be about 53,000 cask-shipments over 24 years, and about 109,000 cask-shipments over 38 years. Even if DOE is able to ship 5 legal-weight truck casks per train, there would still be 10,600 - 21,600 cross-country train shipments, and 53,000 - 109,000 truck shipments within Nevada.

Since DOE has not ruled out shipping SNF as general freight (as opposed to using dedicated or single-purpose trains), the Draft EIS must examine the impacts to rail operations nationally of having SNF casks interspersed with other cargoes.

If DOE intends to use dedicated trains comprised of three or more cask-carrying rail cars, the Draft EIS must assess impacts to the railroads and rail yards where SNF from reactors would have to be consolidated and where trains would be compiled. In addition, impacts of such consolidation of waste on the local communities/cities where rail yards are located must be fully assessed.

Analysis of Alternatives

The Caliente Rail Draft EIS must, according to DOE NEPA guidance, provide “a rigorous exploration and objective evaluation of reasonable alternatives, including the no action alternative.” The guidance document warns: “The failure to consider alternatives

that seem reasonable affects the credibility of an otherwise adequate NEPA review.”
[*Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements*, U.S. Department of Energy Office of NEPA Oversight, May 1993, p. 9]

As part of the evaluation of alternatives and the assessment of impacts related to identified alternatives, the Caliente Rail Draft EIS must also thoroughly discuss options for operation and management of the proposed rail line. These include at least two major options: (1) a dedicated, single-purpose rail line owned and operated by DOE for the sole purpose of shipping SNF and HLW to Yucca Mountain and (2) a multi-use/shared-use rail line that would be used for the movement of other cargoes in addition to SNF and HLW to Yucca Mountain. A thorough and comprehensive assessment of impacts arising from each alternative must be conducted in a fashion that allows for direct comparisons. The Draft EIS should contain an adequate feasibility analysis documenting any identified shared use for the rail spur, identifying pros and cons of such use, and assessing cumulative impacts of multiple-use operations (i.e., increased traffic; increased risk from operations and/or from other cargoes such as toxics, explosives, and the like; etc.). Shared use would likely mean that trains, instead of returning to the railhead with only empty casks, would be carrying other cargoes that could increase risks and consequences of accidents or result in other synergistic impacts with respect to in-bound SNF and HLW shipments.

The Draft EIS must also evaluate, in the same level of detail as the proposed action, alternatives that involve proposed intermodal operations/scenarios, including (1) heavy haul truck transport of large rail casks from an identified intermodal facility and (2) legal weight truck shipments of LWT casks off-loaded from rail cars at the intermodal facility. The discussion of intermodal scenarios and the assessment of intermodal impacts must also encompass the various operational scenarios posited by DOE, including (1) intermodal operations for some period of time until a rail line direct to Yucca Mountain can be constructed, (2) intermodal operations in lieu of a Yucca Mountain rail spur, and (3) concurrent and/or overlapping direct rail and intermodal operations.

Failure to Provide a Meaningful Basis for Rail Corridor Selection

To adequately assess reasonable alternatives to the proposed action, DOE must include other proposed rail corridors than just the Caliente Corridor in the Draft EIS. DOE has not provided a meaningful basis for the corridor selection. In the ROD [Federal Register, April 8, 2004], DOE admits that Caliente was not “clearly environmentally preferable” to the other corridors evaluated in the Repository Final EIS. [Page 18563] Caliente was, moreover, the most expensive option evaluated. The basis for selection appears to be that: “Overall, the Caliente rail corridor appears to have the fewest land use or other conflicts that could lead to substantial delays in acquiring the necessary land and rights-of-way, or in beginning construction.” [Page 18564]

This is a questionable basis for a NEPA decision. Neither the FEIS nor the ROD provides any quantitative estimate (in months or years) of the potential for delay, nor is any economic value given for the purported avoidance of delay, let alone a comparison of the

potential delay associated with each of the five corridors evaluated. Indeed, any evidence that opponents might delay, or even attempt to delay, the Caliente project, would seem to negate the basis for the selection. Since publication of the ROD, several affected parties residing in Lincoln and Nye Counties have publicly announced their intent to prevent or delay the acquisition of rights-of-way and the beginning of construction.

Further, the NOI [Federal Register, April 8, 2004], states that the Caliente Rail Draft EIS “would consider the potential construction and operation of a rail-to-truck intermodal transfer facility, to be located at the confluence of an existing mainline railroad and a highway, to support legal-weight truck transportation until the rail system is fully operational.”[Page 18565] This NOI statement raises at least three troubling questions about the ROD basis for selection of the Caliente corridor.

First, the NOI statement implies that significant delays may occur in spite of DOE selecting the corridor for which it believes delays are less likely. If this is the case, why is Caliente a better choice than any of the other corridors?

Second, the NOI statement implies that any significant delays that might occur can be mitigated by constructing and operating a rail-to-truck intermodal transfer facility (note that DOE has proposed operating the intermodal transfer facility for a period of six years). If this is the case, and delays associated with any of the five corridors can be mitigated for up to six years, how can the avoidance of delays be a valid reason for selecting Caliente over the other corridors?

Third, the NOI statement implies that DOE has not yet selected a location for the rail-to-truck intermodal transfer facility. The evaluation of potential intermodal sites in the Repository Final EIS clearly shows that selection of Caliente would result in much longer highway shipment distances to Yucca Mountain, compared to Sloan/Jean and Apex/Dry Lake, with no offsetting route advantages. If this is the case, and the intermodal transfer facility were to be located somewhere other than Caliente, would DOE still consider Caliente to be the preferred rail corridor?

No Action Alternative: The Mostly Legal-Weight Truck Scenario

The “mostly legal-weight truck” scenario described in the Repository Final EIS is the only realistic no action alternative, and it must be fully and completely analyzed in the Caliente Rail Draft EIS. The Council on Environmental Quality (CEQ) interprets the “no action” alternative as “the federal agency not acting at all” (i.e., in this case, not constructing a rail line or any new facilities). This means that neither intermodal shipment scenario (rail to heavy-haul truck or legal weight truck casks shipped by rail to an intermodal transfer facility) can be considered as a no-action alternative, since to realize any of these scenarios, DOE would have to develop new facilities that do not now exist. As discussed below, both intermodal proposals must be considered as alternative actions to the proposed action. The no-action alternative, the “mostly legal-weight truck” scenario, must be elucidated and evaluated in a manner comparable to and to the same degree of specificity as the proposed action and other alternatives that are considered.

The “mostly legal-weight truck” scenario is the only national transportation scenario that is currently feasible. All 72 power plant sites and all 5 DOE sites can ship by legal-weight truck. DOE has stated in Repository Final EIS that the only exception involves the 300 large dual-purpose casks of naval reactor fuel, which could be shipped to the proposed repository from INEEL by rail and heavy haul truck.

In the Caliente Rail Draft EIS, DOE must compare the total life cycle costs of the proposed action, the mostly legal-weight truck scenario, and any other alternatives considered. A comprehensive economic analysis could very well conclude that legal weight truck transport is not only the least cost option, but might in fact cost hundreds of millions of dollars less than the proposed action.

Potential Alternative: LWT Casks-on-Rail Scenario in the March, 2004 Supplemental Analysis

The NOI misleads when it presents the scope of the “proposed action” in terms of the “mostly rail” activity identified as the preferred transportation scenario in the FEIS. The NOI makes no mention of DOE’s Supplemental Analysis (SA) issued March 10, 2004 which effectively modifies the FEIS by selecting a legal-weight truck/rail intermodal scenario of transportation Nationwide and in Nevada for the first 6 years and possibly longer.

The SA leaves little doubt that DOE intends to implement transportation Nationwide and in Nevada by L-W truck/rail intermodal service for 6 years. The NOI, however, does not present intermodal as the intended transportation scenario, only that DOE will “consider the potential.” 69 F.R. 18566 The NOI misleads either by accident or design.

Significantly, the LWT cask-on-rail intermodal scenario had been summarily rejected in the FEIS as being “impractical”, increasing shipment activity by more than a “factor of 5”, and leading to the “highest estimates of occupational health and public health and safety impacts”. See Chapter 6, *Environmental Impacts of Transportation*, p. 6-33; Appendix J, *Transportation, J.2 Evaluation of Rail and Intermodal Transportation*, pp. J-74 and 75.

There is an evident need to prepare a supplemental environmental impact statement (SEIS) to accommodate the substantial change represented by the selection of such an intermodal scenario, not just because of its prior rejection by DOE but because it represents significant impact activity. For example, instead of the 30 sites nationwide for initial legal weight truck pickup (6 sites without rail service and 24 sites without ability to load rail casks) considered in the FEIS, DOE’s intermodal SA proposal now includes all 77 sites which will require intermodal truck cask loading, transfer and interline facilities to join the national rail system well before entry into Nevada.

The newly proposed intermodal transportation scenario requires an SEIS in order to take “good hard look” and conduct a “reasoned analysis” of the environmental impacts of legal weight truck /rail intermodal transportation nationwide and in Nevada – something that has not been done in the repository FEIS or the Supplemental Analysis context.

In the absence of having considering the specific environmental impacts of intermodal activity as a general matter nationwide in the repository FEIS, the NOI cannot now properly attempt to “tier” consideration of intermodal as a “lesser included scenario” in Nevada only. 40 CFR 1508.28. Unless the true impact of national intermodal activity overall is fairly evaluated, Nevada as the recipient of such activity cannot realistically evaluate the impacts of prior intermodal operations on such activity within its state. Intermodal by its very nature involves significant loading, unloading, transfer and interline transportation activities which the repository FEIS finds give rise to increased impacts and risks to the environment, worker safety and general public health and safety.

Potential Alternative: Heavy Haul Truck/Rail Intermodal Transfer

In the repository FEIS, DOE considered the use of rail to heavy haul trucks for shipping large rail casks to Yucca Mountain. Since DOE is, apparently, not ruling out this scenario, it must also be fully evaluated as an alternative in the Caliente Rail Draft EIS. DOE should specify the ratio of rail use to heavy truck use, delineate the procedures for the intermodal transfers of waste, locations, needed safety measures and routes, and comprehensively assess impacts in a manner that affords comparisons among alternatives.

Impact Areas

The Caliente Rail Draft EIS must address all of the standard impact categories routinely covered under a NEPA analysis (i.e., land use, visual resources, noise, socioeconomics, cultural resources, water resources, geology and soils, air resources, biological resources, traffic and transportation, human health and safety, environmental justice, infrastructure, waste management, etc.). In addition, the Draft EIS must address the impacts of the project that derive from the nuclear nature of the effort (i.e., the transportation of SNF and HLW), the public’s high perception of risk regarding things nuclear and the impacts that derive from such risk perception, and possible stigmatizing effects resulting from the proposed action.

In addition to addressing the full suite of impact areas for the rail line, DOE must also assess impacts related to the proposed intermodal facility and intermodal operations (both heavy haul truck and legal weight truck) and all other facilities and activities, either in Nevada or elsewhere, related to the proposed action and any alternatives that are considered. Examples include maintenance and support facilities, staging areas, temporary rail yards, storage facilities, improvements/alterations to existing rail or highway facilities, etc.

Regions of Influence

DOE must reevaluate the regions of influence identified in the Repository Final EIS for specific impact areas associated with the Caliente rail corridor, rail line construction, and

rail operations. These regions of influence are areas that would be impacted by the proposed withdrawal of land and activities outside the physical boundaries of the eventual right-of-way. The largest regions identified by DOE are for public health and safety, 800 meters (one-half mile) on each side of the track for routine (incident-free) operations, and 80 kilometers (49.7 miles) “radius for potential impacts from accident scenarios.” [FEIS, p.3-124]

Many of the impacts on rural Nevada will result from activities outside of the identified corridor. These activities are currently poorly defined, and will occur in areas where baseline environmental data has not been collected. DOE needs to accurately define all regions of influence from all activities associated with the construction and operation of the rail line. Once the areas of influence are described adequate baseline data must be collected for these areas.

Considering impacts such as noise and aesthetics, these regions can extend far beyond the 400 meters limit used by DOE to bound impacts on adjacent lands. For example, rural residents near newly constructed railroads in Wyoming report that train noise can be heard several miles away from the rail line. Although the noise level is low, it is new noise in an area that had little experience with man-made noise in the past, and is considered by residents to be a significant adverse impact that was not predicted or assessed in the environmental impact statement for the railroad. Visual impacts may similarly extend far beyond the specified region of impact.

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. Splitting a ranching operation with a rail line can have significant impacts on the entire operation, not just the area within the right-of-way. Therefore, the region of influence for impacts to ranching operations should include the entire area of all ranches crossed by the rail line, including grazing allotments.

The region of impact for wildlife, particularly big game, should include the entire range used by the wildlife, including summer range, winter range and critical habitat. These ranges should be determined based upon current and historic migration patterns of wildlife.

Cumulative Impacts

The Caliente Rail Draft EIS must thoroughly assess cumulative impacts from other DOE activities (i.e., low-level radioactive waste, mixed LLW and hazardous waste, and transuranic waste activities at NTS; other ongoing or planned DOE programs at the NTS; past weapons testing activities at NTS; commercial/private industry activities at/near the NTS), ranching; mining; any planned highway or other infrastructure activities ongoing or planned for the area surrounding the proposed rail line; and any and all other existing or reasonably foreseeable activities that might affect or be affected by the proposed action.

Impacts on Ranchers and Other Users of the Land

Ranchers who have grazing allotments and other legitimate reasons necessitating ongoing access to the lands impacted by the rail line are being and will continue to be substantially affected. It is instructive to note that DOE has never, in more than 20 years, informed affected ranchers along the Caliente corridor (or any of the other potential rail access corridors under consideration) of the exact route(s) being considered or the possible impacts that would accrue to their activities and livelihood in the event the route was selected and the land identified for withdrawal. For most if not all of the ranchers impacted by this action, the first indication they had that such an action was contemplated was the December 29th Federal Register Notice announcing DOE's asking BLM to segregate a one mile corridor from surface entry and other uses. DOE has a proactive responsibility to inform affected parties of the contemplated action and its impacts and seek their input prior to having made a decision regarding the selection of one corridor over others under consideration. In this regard, DOE has been derelict in its duties and responsibilities.

DOE must consider in detail the impacts on ranching of constructing and operating the proposed rail line. The DOE proposal for rail development in the Caliente corridor would adversely affect ranching operations in Lincoln and Nye Counties. The Caliente corridor would directly impact ranching operations in Meadow Valley, Reveille Valley, Oasis Valley, and other areas.

The DOE corridor preference criteria, particularly avoidance of privately-owned land, ignore the realities of ranching in Nevada. Land ownership does not accurately reflect land-use. Most ranching operations are based upon a combination of privately owned fee land and grazing leases on publicly owned lands. 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. If the rail line is fenced, the splitting of ranching operations will be perhaps the most significant impact. The rail line will bisect many local roads, and grade-separated crossings will be limited to major roads.

Ranching operations would be the most affected by the barrier to movements created by the proposed rail line. Box culverts and bridges are commonly used to provide underpasses under railroad tracks for the movement of livestock and equipment. Underpasses will be limited to locations where underpasses can be constructed based on the topography and the profile of the proposed rail line. The degree of impact is a combination of the proposed at-road crossings (either at-grade or grade-separated) and proposed drainage structures. A preliminary State analysis for the Caliente corridor found the average distance between potential crossing locations is 19.2 miles. The longest distance is 39 miles.

The proposed rail line will split existing ranching operations. Movement of vehicles, equipment and livestock across the rail line will be complicated by the necessity of crossing the rail line. The increased noise and activity associated with the operation of the rail line will significantly change the environment of rural Nevada.

It should be noticed that where ranches are located near existing rail lines, historically the ranch operations and lands were acquired based upon the location of property with respect to the rail line. Ranchers seldom acquired land on opposite sides of a rail line, since they recognized that the land would be difficult to operate and maintain. A new rail line, however, will split existing operations, causing significant economic impacts on these operations.

A detailed assessment of the impact on these existing operations is necessary. This would begin with an assessment of the number of pastures split, the location of watering sources in the split pastures, and the number of parcels split that result in parcels small enough to be unusable. The impact on pastures, feeding operations, and movement of equipment and supplies should also be assessed.

Livestock that get on the tracks may be killed by trains. The economic impact of unrecovered livestock losses should be assessed.

Access and maintenance roads for the rail line will create numerous new access points for trespass. The impacts of this trespass on ranchers (as well as on local and state law enforcement/public safety agencies that would have to deal with it) should also be fully assessed.

Construction of the rail line, particularly if it is fenced, will limit access to springs and wells. This will significantly reduce the grazing value of land unless other sources of water are available for livestock. It should be noted that livestock do not readily use underpasses under rail lines. Therefore, just providing underpasses will not mitigate this impact. The impact of splitting existing pastures, and particularly, isolating portions of pastures from sources of water should be assessed.

In addition, railroad yards, borrow areas, areas for disposal of surplus fill, staging areas, construction camps, lay down areas, access roads to construction initiation points, and other construction and maintenance activities will result in impacts on ranching well outside of the identified corridor.

Construction of a rail spur will also likely adversely impact both paved and unpaved roads traversed by the railway.

The rail corridor should be as narrow as practical to reduce cumulative impacts on the adjacent public lands. The corridor should be a right-of-way, not a permanent withdrawal.

DOE should consider fencing only where absolutely necessary for public safety and security. Fencing is extremely detrimental to wildlife migration as well as to grazing permit-holders, private property owners and the general public.

The Draft EIS should consider all impacts the rail line will have on local land use plans, zoning and existing land uses.

Impacts on BLM Resource Management Plans

The EIS process must address all needed changes to the affected BLM resource management plans and the appropriateness of those changes. Existing resource management plan policies or land use maps should not be changed simply as a reaction to the Draft EIS.

Impacts to Mining and Mining Claims

Construction and operation of the proposed rail line also has the potential to impact mining claims and minerals exploration in a wide swath of land across central Nevada. The proposed action has the potential to cause impacts in two areas of concern. One is the status of existing mining claims that may be located within or in proximity to the proposed rail line. The other is the status of potentially hazardous abandoned mine openings that may exist in the rail corridor.

Owners of existing mining claims in the corridor should, at a minimum, be guaranteed access to their claims and be allowed to develop them. Mineral exploration and mining are vital to the state's economy. The Draft EIS must fully assess impacts to mining and mineral exploration.

It is possible that potentially hazardous abandoned mine openings may exist within or proximate to the rail corridor. The Nevada Legislature has charged the Division of Minerals with the task of discovering and causing to be secured hazardous abandoned mine openings within the state. In the event the rail line is constructed and hazardous mine openings are discovered within the corridor, such mines must be secured by those constructing the rail line. At a minimum, the Division of Minerals must be given access to the corridor for the purpose of securing such mines.

The Nevada Division of Minerals advises that a new mine is being developed in the Goldfield area that will impact US 95 and could also affect the proposed rail alignment. The Draft EIS must assess any impacts of the rail line on this new mine and on any existing or planned mining activities.

Impacts to the Nellis Test and Training Range (NTTR)

Portions of the proposed rail alignment border and in some instances intrude upon land withdrawn for the U.S. Air Force Nellis Test and Training Range. The proposed Draft EIS must thoroughly and comprehensively assess impacts of all aspects of the proposed rail line (including evaluation, construction, rail operations, maintenance, etc.) on Air Force missions and activities related to the NTTR. Such analyses must not only physical impacts to the NTTR, but also potential impacts to NTTR activities, such as in-flight training missions, as a result of restrictions required due to the need to protect SNF and HLW shipments from risks associated with aircraft accidents/crashes. The assessment of such impacts must not be limited only to areas adjacent to or within the NTTR, but must

include the entire length of the proposed rail corridor where Nellis flight operations currently occur or are assumed to occur in the future.

Conversely, the Draft EIS must thoroughly assess all impacts of NTTR activities (both current and planned) on the proposed rail line and rail operations. Such analysis must include evaluation of risks and impacts associated with aircraft over flights and aircraft crashes into trains, heavy haul truck, or legal weight truck carrying SNF and HLW.

Impacts to Wildlife

In previous impact assessments, DOE has significantly understated the impact to biological resources in general when assessing the impact of the various rail corridors. 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.

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 near the rail corridor includes a sage grouse strutting ground or leks. Even if the proposed route does not cross leks, they may be close enough to the proposed route that construction and operation of the rail line may adversely impact the use of the leks. Impact of the construction and operation of the rail line on all leks in proximity to the rail line should be assessed.

Big game can be adversely impacted by linear facilities such as the rail line if the facility blocks their migration paths. This is particularly true if the right-of-way is fenced. Pronghorn rarely jump a fence, but rather go under fences. Therefore, the type of fencing, if used, to fence the right-of-way is critical. Big game biologists generally recommend that the bottom strand be at least 18 inches above the ground to allow pronghorn to pass through a fence. The location and type of fencing, if used, should be described in detail.

Rail lines typically blow clear of snow in areas of heavier snowfall. Wildlife tend to use these cleared areas for travel, resulting in significant wildlife mortality from railroad operations. The impact on wildlife from impacts with trains should be assessed in detail.

Impacts to Threatened and Endangered Species

The Nevada Department of Conservation and Natural Resources, Nevada Natural Heritage Program (Program) has provided a table (see [Attachment VII](#)) showing known occurrences of rare and sensitive species that may be affected if and when rail construction occurs. These data represent only records reported to the Program which meet criteria for scientific credibility and accuracy. They do not represent, and cannot

replace, complete surveys on the ground to assess the presence or absence of sensitive biological resources. There may be additional undocumented occurrences of these and other species of conservation concern within the proposed rail corridor, since much of the affected land has never been evaluated or inventoried. A complete and thorough assessment of flora and fauna in the rail corridor must be undertaken as part of the EIS process.

The Program is constantly incorporating new data into its database, which is based on data input as of 28 January 2004. New or revised data will likely be available at the time DOE develops the Draft EIS. DOE must work closely with the Nevada Natural Heritage Program and the Department of Conservation and Natural Resources in conducting an independent assessment of potentially impacted species and environmentally sensitive lands.

Livestock and wildlife are frequently killed by trains when they are on the tracks. This carrion then attracts other species, particularly eagles and other raptors, which then are killed by trains. These impacts on threatened and endangered raptors should be assessed.

Impacts on Soils

Soils in some areas may be strongly alkaline in nature. The floor of the valleys crossed may also include a number of playa deposits that consist of finer grained sediments. There may also be areas of alkali flats. These soil types are generally more difficult to re-vegetate following disturbance. Re-vegetation will also be difficult due to the arid climate. Construction of the rail line will result in loss of soils through wind erosion, with some degradation of air quality as a result. These impacts must be assessed.

Impacts on delicate desert soils also need to be addressed. Desert soils are fragile and can be easily damaged by human activities, and recovery often takes hundreds of years. DOE needs to evaluate the impact of construction and operation of a rail spur on ecologically sensitive soils and environmentally sensitive lands.

Impacts to Native American Interests

The DOE proposal for rail development in the Caliente corridor would adversely affect Native American interests. The proposed repository location at Yucca Mountain is a very old border between the Western Shoshone and the Southern Paiute. In the immediate area are several federally recognized tribes and their reservation communities, as well as other urban and rural Native American residents, and organizations such as the Western Shoshone National Council. Most Native Americans in Nevada do not want the disturbance of cultural resources that they see as the inevitable outcome of the Yucca Mountain project and the proposed rail line.

The entire Caliente corridor lies within lands claimed by the Western Shoshone Nation under the Ruby Valley Treaty. DOE has acknowledged that the corridor may cross traditional holy lands important to the Southern Paiute, Western Shoshone, and Owens

Valley Paiute and Shoshone peoples. The Bonnie Claire alternate portion of the Caliente corridor near Scotty's Junction would traverse lands held in trust for the Timbisha Shoshone Tribe. According to DOE, "archaeological surveys have been conducted in less than 1 percent" of the total area for the Caliente corridor. [FEIS, 3-151]²

Rail shipments to Caliente from California on the existing Union Pacific mainline would traverse almost the entire length of the Moapa River Indian Reservation. All of the truck shipments required under the DOE mostly rail scenario would cross the Moapa River Indian Reservation on I-15 and the Las Vegas Paiute Reservation on U.S. 95.

Tribes potentially affected by the proposed DOE rail line to Yucca Mountain have identified the following concerns: DOE & Bureau of Indian Affairs (BIA) failure to formally recognize affected tribe status and provide financial and technical assistance; protection of religious and cultural sites, and plants and animals, both on and off reservations; implications of rail spur right-of-way acquisition for Western Shoshone land claims (Ruby Valley Treaty); cultural implications of possible radiological contamination and cleanup activities on tribal lands; stigma impacts on tribal businesses; tribal authority to regulate shipments across reservation lands, including pre-notification and monitoring; and tribal roles in emergency preparedness planning and training and emergency response.

DOE must also thoroughly assess impacts of rail construction and operations on cultural resources, archeological sites, artifacts, and other historic and pre-historic occurrences within the withdrawal area in full compliance with 43 USC.

Impacts on Unique Cultural and Artistic Resource on Private Lands Adjacent or Proximate to the Proposed Rail Line

This comment refers primarily to the impacts of the proposed land withdrawal and subsequent rail line construction and operations on the massive "City" sculpture being installed by world renowned land artist and sculptor Michael Heizer. This project represents more than three decades of work and a major investment of time and resources. The complex, which is still a work in progress, is one of the most massive sculptures ever built. Land proposed for withdrawal surrounds the project and, if a rail line is eventually constructed, would do irreparable damage to the project, which was located where it is because of the very remote and isolated nature of the area. There may also be other visual and aesthetic impacts on other areas along the corridor proposed for withdrawal.

As is the case with affected ranchers and others, DOE did not inform Heizer or his sponsors of plans for a rail spur that would affect the project. In fact, it appears that DOE was unaware of the existence of this massive, one-of-a-kind sculpture until after the application for land withdrawal had been submitted and the Federal Register Notice had been issued.

² The designation "FEIS" refers to DOE's Final Environmental Impact Statement for Yucca Mountain; the numbers which follow are section/page references in the FEIS.

Impacts of DOE's proposed action to this unique and irreplaceable cultural and artistic resource must be thoroughly assessed.

Impacts on Current and Future Water Resources, Water Users, and Water Quality

The proposed action could have significant impacts on water resources within the area of the rail corridor and for stakeholders outside the actual corridor who currently use or who might in the future have use for such water resources. Likewise, activities engaged in by DOE in the course of implementing its plans for the rail line, such as construction activities, gravel mining and land disturbance, rail line operations, waste disposal, etc. could have deleterious impacts on water quality. In addition, the area proposed for the rail line includes numerous spring areas, which, if degraded in any way, could adversely impact wetland habitat and wildlife and livestock. All of these impacts must be thoroughly assessed in the Draft EIS.

In this regard, DOE must also evaluate the impact of the proposed action on applications for water rights filed by the Southern Nevada Water Authority with the State of Nevada Water Engineer. In addition, rights-of-way the Authority and, perhaps, others have for future pipeline corridors might be transected by the proposed rail corridor.

Portions of the proposed rail corridor include areas which could be needed for the development of future wells to monitor groundwater flows that pass through the Pahute Mesa nuclear blast cavities. Impacts of the rail line and related land uses on the future ability to monitor impacts of past nuclear testing on groundwater must also be assessed.

The Draft EIS must also address the issue of how DOE plans to obtain water required for the construction of the proposed rail line, rail operations and other activities. This is especially relevant since the State Engineer has already denied DOE permanent water rights for the Yucca Mountain repository on the ground that the use of water for a repository is not in the public interest. It is difficult, therefore, to see how a rail line for the importation of radioactive waste into Nevada will pass the public interest test.

Significant cuts may be required to maintain grade and curve requirements. In locations where the groundwater is close to the surface, these cuts may intercept aquifers, causing groundwater to seep from the cuts to the surface. Areas of groundwater that may be intercepted by cuts should be identified, and the impact of any seepage from aquifers should be assessed.

Environmental Issues and Resources to Be Examined Are Incomplete.

The "environmental issues and resources" section of the NOI does not include the issue of air quality impacts of intermodal activity. It should.

Impacts on Air Quality

Impacts on air quality will occur during both construction and operation. During construction, fugitive dust emissions from construction activities should be assessed. During operations, fugitive dust emissions will occur from access and maintenance roads. These fugitive dust emissions should be assessed. Methods of controlling fugitive dust during both construction and operations should be described, and the impacts of any such dust suppression activities must also be thoroughly analyzed.

Impacts on Visual Resources

The rail line's impacts on visual resources must be addressed in the Draft EIS, especially in close proximity to Beaver Dam State Park, existing highway corridors, wilderness study areas, communities and any other areas that the public input process deems appropriate. Construction of the rail line should avoid, wherever possible, unnecessary cuts and fill. The rail line should follow existing disturbed areas wherever possible.

Re-suspension of Radioactive Particles from Past Fallout Events

The proposed rail corridor lies in the path of many of the fallout clouds that left the NTS during atmospheric weapons and cratering nuclear explosion tests. These particles, which remain hazardous for hundreds of years, lie in the soil and will pose a hazard during any period of land disruption (i.e., rail construction). The railroad work will involve the movement of massive quantities of desert soils which will likely result in the radioactive particles being lofted into the atmosphere, creating hazards for railroad workers, and the public. DOE must assess the risks and impacts associated with soils disruptions and re-suspension of any residual fallout particles.

Preparatory to developing the Draft EIS, DOE should conduct extensive baseline surveys of the area within the proposed rail corridor – and any other areas that would be disturbed by construction or other activities – to develop baseline data on the extent of contamination against which impacts of rail construction and operational activities can be assessed.

Socioeconomic Impacts

The socioeconomic impact of construction and operations employees on the rural communities must be assessed in detail. Large construction workforces can cause significant disruption of services, create significant demands for housing, place significant demands on local schools, etc. These impacts must be assessed in detail.

DOE should provide detailed information on the number and type of construction workers required for the project. This should include construction workers required for support facilities such as the construction of the operations center, locomotive shop, maintenance headquarters, automotive vehicle maintenance facility, emergency station,

dormitory, fueling station, railroad car repair shop, and storage tracks.

Current school bus routes may be affected by the rail line. The rail line bisecting school districts could limit the flexibility of the school districts in the future if they wanted to change the enrollment areas for the elementary students. Such impacts must be assessed in the Draft EIS.

In a largely rural area, the construction of a new industrial facility such as a rail line significantly changes the rural atmosphere enjoyed by residents. According to one ranch family crossed by a new coal line in rural Wyoming, this is the most significant impact of a new rail line on their lives. The social impact on the well-being of rural residents must be adequately assessed.

The mere fact that the line and/or intermodal facilities and activities will be involve nuclear waste transportation also has the potential to stigmatize both the spur line/access route itself and surrounding areas, resulting in potential impacts to property values and other economic consequences for users of adjacent or nearby lands. The Draft EIS must assess impacts from impacts driven by risk perception and stigma attached to nuclear-related activities/facilities.

Other Construction Impacts

All construction activity should be described, including the construction of support areas and construction of access roads to construction initiation points. The number and location of construction support areas or construction initiation points should be described, the route selected, length of the route, the schedule, the number of structures required, and the location of existing roads. The location, size and duration of construction camps constructed to provide living facilities for workers and for construction support must also be described. DOE should also describe the amount and types of materials and equipment delivered to temporary storage yards or lay down areas in the construction support areas.

Construction of major structures such as bridges across major drainages and highway grade separations should be described. Most of the construction of these structures will involve the placement of precast concrete structures. Construction activities including site preparation, pouring of footings, and placement of precast structures should be detailed. DOE should identify locations for the precast plant and staging yard.

DOE should describe in detail the construction and preparation of the rail bed. If construction will begin simultaneously at multiple locations, these locations should be given. Methods of removing and storing topsoil should be described, including steps required to maintain viability of the topsoil. Any temporary construction access roads built along and within the right-of-way should be described.

Locations of local road underpasses, livestock underpasses and culverts should be provided. The size and type of construction for local road underpasses and typical livestock underpasses should be provided.

To maintain the required grades, significant cut and fill will be required. Equipment used for rail bed construction should be described, including scrapers, dozers, power shovels, drag lines, front-end loaders and belly dump trucks. Blasting required as part of the cut activities should be described.

General practice is for cut material to be used as fill where produced to the maximum extent feasible and efforts be made to balance cuts and fills. However, haul distances between cuts and fills or additional fill requirements may require borrow areas outside of the right-of-way. Additional rights-of-way required to dispose of cut material not useable because of its composition or excessive haul distances should be described.

Gravel and other fill may be acquired from local sources to minimize haul distances. Locations and quantities of these materials should be provided, and impacts on the overall supply of such materials and the effects on other users should be assessed.

DOE should identify sources for sub-ballast material. It is usually obtained locally from gravel pits at various points along the right-of-way.

DOE should describe the method of replacing topsoil on disturbed areas and the method of re-vegetation to be used, including vegetation types and seeding and mulching options. Methods to control runoff and erosion such as silt fences, plastic netting, and other silt control devices should be described.

Significant quantities of steel will be required for the rails. DOE should assess the impact such acquisition of rails will have on the national steel market, including the cumulative impacts from other DOE activities, such as clean-up at other DOE sites. The location of rail welding facilities should be provided. The impact on transportation facilities in the region of trains transporting the rail to the construction site should be assessed.

Quantities and source of ballast material should be provided, including an assessment of the impact of acquiring this material.

Solid waste generated during construction consists of scrap rails, ties, bridge timber, and track fastenings. Although some of this material is usually salvaged as scrap, much of it will be disposed of in local landfills. The impact on publicly owned landfills, if used, should be described. If DOE develops new landfills, their location should be described and the impacts assessed.

The Draft EIS should clearly define construction haul routes and how these routes affect local communities and the public's ability to utilize the public lands in a multi-use capacity.

Impacts on Emergency Response, Public Health, Security, Public Safety, and Operational Oversight Resources

The Draft EIS must assess the adequacy of emergency response and security resources (local, state, federal) all along the proposed rail line and identify the measures required to assure the safety and security of the shipments. Impacts to local and state first responders and public safety personnel are especially troublesome, since the proposed rail line's location in isolated sections of rural Nevada makes response to any sort of incident or accident extremely problematic and response to a nuclear incident especially difficult. Impacts should be assessed in relation to personnel, equipment, training, funding, incident response, incident management, communications, etc.

Impacts on the State and local resources would be extensive and of long duration. Corridor emergency response personnel, including affected state agencies, will need additional training to deal with emergencies related to rail shipments of radioactive materials. Hospitals, both along the route and in Las Vegas (the nearest regional and full-service medical facilities), would need extensive training and equipment. Such impacts will not be one-time occurrences, but would continue for as long as the rail line (or intermodal facility) remains operational. The Draft EIS must, therefore, examine such impacts in a longitudinal context and assess the decades-long requirements for emergency management, emergency response, and public health and safety.

In addition to impacts related to emergency preparedness and security, the Draft EIS must assess impacts to state and local agencies of operational oversight for the shipments. Such impacts include costs (in terms of funds, personnel, equipment, etc.) of continuous inspection and escort operations that will be required, whether the rail line functions independently or in concert with intermodal operations.

A degradation in emergency services provided by volunteer fire departments will be a critical impact caused by delays at this at-grade crossing. When the at-grade crossing is blocked, responses to calls could be delayed. The options for the responding units would be to wait for the tracks to clear, which could cause a significant delays in response.

Railroad caused wildfires can be a significant impact on emergency services. In rural areas, residents are usually aware of the potential for lightening caused fires, and keep close watch during thunderstorms for possible wildfires. Railroad fires, however, can occur at anytime. Therefore, fires caused by railroads go undetected much longer than naturally caused wildfires. This can create much more difficult conditions for controlling the fires. Impacts of railroad caused wildfires on emergency response services and rural residents should be assessed.

Areas Under Consideration for Designation as “Wilderness”

There are a number of areas located within or adjacent to the proposed corridor that are currently under consideration for being designated as federal “wilderness” areas. The Sierra Club and others commented on this issues at the House of Representatives

Railroad Subcommittee hearing in Las Vegas on March 5, 2003. That testimony is incorporated by reference in these comments. DOE must assess the impacts of the proposed action on these wilderness study areas.

Impacts to Wild Horses and Burros

The federal Wild Horse and Burro Act guarantees each herd full access to herd management areas as delineated by the Bureau of Land Management and assures that horses and burros will maintain their free roaming nature. The proposed Draft EIS must identify all possible impacts to wild horses and burros within the areas affected by the rail corridor and the cumulative impacts to each herd. Any construct or other activities associated with the proposed action must take into consideration special seasonal impacts, such as foaling season and migration. Impacts of the project affecting access to water sources and restriction of movement within management areas must be identified and addressed.

Impacts to Agriculture

The Nevada Department of Agriculture has posed a number of question that must be addressed through the Draft EIS and DOE NEPA process. These include:

1. How will the withdrawal of BLM land affect current permitted uses of BLM managed lands? Does DOE have to recognize existing uses of public land such as grazing, mining etc. and compensate or mitigate adverse impacts?
2. What affect does the FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLMPA) have upon the proposed railroad, input from the public and effects upon other multiple uses of the public lands that would be affected.
3. Livestock, horses and wildlife have utilized the proposed area with few to no fences and or obstructions to their movement for more than 100 years. Numerous livestock operations have developed under this open range characteristic which has become increasingly rare in the west. Wild horses and wildlife have also adapted to this open range characteristic. Fencing a corridor across 300± miles of Nevada's open range will radically change the biological and cultural character of the State and have tremendous biological and economic impacts creating a myriad of problems for livestock and wildlife. How does DOE intend to determine and document these impacts and how do they intend to mitigate, if possible, or compensate the state, its industries and its citizens for these impacts.
4. If the rail corridor is fenced, how wide will the easement be, will the livestock interests be able to have inputs as to fencing specifications for excluding livestock, and what measures will be offered as mitigation for forage loss within the easement area and added cost of operation due to the fence i.e. develop new water, loss of distribution increased travel to manage livestock etc.?

5. Who will have responsibility for maintenance of any fencing projects that might become necessary as part of the proposed project?
6. If the rail is not fenced and livestock losses occur as a result of rail traffic what will be the process of documenting and compensation for the lost livestock?
7. Has the DOE identified leks and or nesting, brooding or winter habitat for Sage Grouse in the proposed alignments. How does DOE intend to determine and document potential impacts to sage grouse specifically and other sensitive wildlife species. What mitigation factors is DOE going to use to reduce direct impacts (habitat loss/fragmentation, loss water sources) and indirect impacts (fencing and transmission lines, increase in predator advantages in habitat, etc.).
8. How does DOE intend to prevent introduction and spread of invasive and other weeds through their disturbance of the land for any part of construction of the rail line or support roads and support facilities? What steps will be taken to assure consistent and effective control of invasive weed species over the life of the railroad?
9. Does DOE intend to re-vegetate disturbed areas, and with what plant species? Will state agencies, BLM and permittees be included in the determination of re-vegetation species (re-vegetation may result in an attractive nuisance for livestock and wildlife). Accomplishment of successful re-vegetation is highly dependent upon proper planting, seed viability and climate (i.e. moisture and growing temperatures). Does DOE intend to irrigate re-vegetation areas if and when necessary?
10. How will the rail line affect public access across the rail and support roads? Will permittees be able to extend pipelines/water across the rail line and support roads to improve livestock distribution and decrease potential conflicts between the rail line and livestock operations.
11. What kind of security will DOE implement along the rail corridor? What limitations will be placed on the livestock permittees and general public with respect to normal land use activity?
12. DOE will require water for construction of the rail line, support facilities and ongoing rail and truck operation. How will DOE determine, document and compensate existing water right holders for any negative impacts?
13. Will water developed as part of the project be available for livestock, wildlife, recreation, safety and emergency services?
14. How will DOE compensate the state and counties for the degradation of paved and gravel roads due to heavy traffic during construction and the increased traffic resulting from ongoing operation of the rail line and truck traffic to Yucca Mountain.

15. Will DOE assist counties and rural communities with limited resources to meet the increased demands for public services due to the influx of construction and support personnel and their families.

Impacts on Law Enforcement and Public Safety

The proposed rail line From Caliente to Yucca Mountain for the transportation of nuclear waste to Yucca Mountain lies entirely within the Central Command of the Nevada Highway Patrol Division (Division).

While the Nevada Department of Public Safety/Highway Patrol Division does not have regulatory authority that relates to rail or transportation of materials by rail, State policy would require the Division to inspect and escort shipments before proceeding to the repository.

Consequently, DOE (in addition to any other training or resources required by local government agencies or local first responders) will need to assess resources required by the State to carry out mandated responsibilities and address impacts, including but not limited to the inspection, security, and escort of these shipments. This would also be a requirement for all “legal weight” and heavy-haul truck shipments as well.

Some impacts of this shipment campaign, but not necessarily all, would be:

- Required inspection and escort personnel
- Inspector and escort vehicles and other necessary equipment
- Inspector and escort personnel training and related expenses
- Inspection facilities at point of entry in the State
- Enroute facilities for inspection and repair of vehicles
- Radio communication system in transportation corridor and connect ability to other State Public Safety and local government agencies communication systems

Should an incident occur, additional public safety concerns include the probability of the closing of US 95 for extended periods of time (other routes may also be impacted as well and need to be evaluated) to allow first responder and other recovery vehicles and personnel to enter the area and perform recovery and mitigation in the area. Some possible consequences that have impacts requiring assessment could involve:

- Rerouting vehicular traffic
- Indefinite route closure
- Negative impact on Division resources and operations due to maintaining perimeter control and routine patrol from the areas affected

An incident need not necessarily involve the breach of a shipping container to cause significant impacts. It could involve a derailment or other situation requiring a train to stop for a period of time for mechanical repair or a truck shipment, legal weight or heavy haul, unable to move because of a mechanical problem or waiting for repair.

During the construction phase of the proposed rail line from Caliente to Yucca Mountain the Division will be impacted by a significant increase in vehicle traffic that must be addressed in the Draft EIS (i.e., increased personnel, training, vehicles, and equipment).

The issues addressed above need to be extended to the entire Highway Patrol Division statewide, not just a single Command area, due to the large geographical area this corridor would cover as well as the resources that may have to be drawn upon from other Command areas.

Finally, the comments the Highway Patrol Division made in response the Department of Energy's Draft Environmental Impact Statement for the Yucca Mountain Repository in November 1999 should be considered, and are incorporated by reference and attached to this document as **Attachment IV**.

Impacts to Las Vegas and Clark County

The Draft EIS must include a comprehensive assessment of impacts to the Las Vegas metropolitan area and Clark County that result from a Caliente rail line and/or rail-to-truck intermodal operations. The Draft EIS should specifically address the extent to which the choice of the Caliente alternative conforms with or fails to conform with Congress' directive in the FY 2004 Energy and Water Development Appropriation Act that any rail line to Yucca Mountain avoid shipments of SNF and HLW through the Las Vegas area.

In the Repository Final EIS, DOE estimated that about 7 percent (660 out of a total 9,646 rail cask-shipments) of all rail shipments to Yucca Mountain, via a Caliente rail line, would travel through downtown Las Vegas. DOE assumed that the remainder (about 93 percent of the rail total) would use the Union Pacific mainlines from Chicago or Kansas City, via Gibbon, Nebraska, and Cheyenne, Wyoming, entering Nevada from Utah. [FEIS, Pp. J-140 to J-186]

Rail shipments through Las Vegas could potentially account for about 89 percent of the total if the Caliente rail line is constructed. Analyses done for the State of Nevada, using shipment numbers from the Repository Final EIS, conclude that up to 8,564 of the total 9,646 rail-cask shipments could traverse downtown Las Vegas. Even if DOE shipped an average of three casks per train, there could be 2,854 shipments over 24 years, or an average of two train shipments per week, through Las Vegas.

Current DOE policy is that rail carriers will determine the routes used for shipments to Yucca Mountain. Four major cross-country rail routes are available for East-West shipments. A number of factors could result in the vast majority of shipments from the East traveling to Nevada on the Burlington Northern-Santa Fe or Union Pacific routes across Texas, New Mexico, Arizona, and California. All rail shipments to Yucca Mountain, except those from the Pacific Northwest and Idaho, could therefore travel to Caliente through downtown Las Vegas under credible alternative routing scenarios.

Studies done for the State of Nevada on rail routing suggest that the railroads could find it expedient for a variety of reasons (economics, logistics, convenience, etc.) to route spent fuel and HLW shipments along southern cross-country rail corridors, meaning that shipments would come west on the Burlington Northern and Santa Fe Railroad to Barstow, California (Daggett interchange) and then travel east on the Union Pacific line through Las Vegas to Caliente. That's because (1) according to DOE's pronouncements, it will be the railroads that will ultimately select the rail routes for SNF and HLW shipments and (2) bad weather and heavy traffic congestion along northern cross-country rail corridors would very likely make the southern routing option attractive, at least for a significant portion of each year. Under this scenario, Las Vegas could see over 80% of shipments destined for Yucca Mountain, if a Caliente rail spur is built.

Even if the railroads do not employ a southern routing strategy, hundreds of shipments of spent fuel from all of the California, Arizona and Texas reactors (and possibly from reactors in Louisiana, Washington and Oregon) would access a Caliente rail spur via the Burlington Northern and Santa Fe line, connecting with the Union Pacific line in Barstow, California and on to Caliente through Las Vegas.

These findings are contained in a study done for the State of Nevada by Planning Information Corporation (PIC) of Denver, Colorado titled, "The Transportation of Spent Nuclear Fuel and High-Level Waste: A Systematic Basis for Planning and Management at National, Regional, and Community Levels." In that report, PIC examined recent rail industry mergers and acquisitions, traffic levels, and weather considerations along the northern cross-country rail corridor. PIC concluded that the railroads might very well seek to avoid nuclear waste shipments along the high-traffic-density mainlines, especially through Nebraska. Under these circumstances, the report found that the Burlington Northern and Santa Fe line from Kansas City to San Bernardino County, CA would become the primary east-west rail corridor, meaning that most waste would still pass through Las Vegas to reach a Caliente rail spur or intermodal facility.

The Union Pacific mainline travels through the Las Vegas metropolitan area for about 36 miles. Most of the largest and best-known Las Vegas hotel-casinos are within a mile-and-a-half of the railroad. From Flamingo Road to Fremont Street, the railroad runs parallel to the world-famous Las Vegas Strip, little more than one-half mile away. Along this segment of the route, several major hotel-casinos are actually less than 400 meters (one-quarter mile) from the railroad, and some hotel-casino parking lots are within 60 meters (200 feet). The Clark County Government Center in downtown Las Vegas is located adjacent to the railroad. Two major public entrances to the county government building are less than 100 meters from the railroad, and the employee parking lot is within 20 meters of the railroad.

Many thousands of Las Vegas residents live and work near this potential rail route to Yucca Mountain via Caliente. According to the 2000 Census, more than 39,000 people reside within one-half mile of the Union Pacific mainline, between Apex Siding on the North and Arden Siding on the South. When the resident population is combined with the school population, estimated average daily workers, and estimated hotel/casino guests, the average daily exposed population within one-half mile of the routes is currently about 86,000.

If DOE constructs a new rail line from Caliente to Yucca Mountain, tens of thousands of Clark County residents would be affected by the shipments. Moreover, these shipments could continue for a period of four decades or more. The potential for large-scale rail shipments through Las Vegas is a major concern for the State of Nevada, Clark County, and the Cities of Las Vegas and North Las Vegas. In addition to the potential impacts on residents, the proximity of the Union Pacific mainline to the world-famous Las Vegas Strip and to other major commercial properties create truly unique local impact conditions.

Additionally, the Repository Final EIS estimates that DOE would still need to make 1,079 legal-weight truck shipments to Yucca Mountain over 24 years, even if the new rail line is constructed. Under current DOE highway routing preferences, all of the truck shipments to Yucca Mountain would travel through the Las Vegas metropolitan area on I-15, I-215, and U.S. 95. [FEIS, Pp.2-49, J-186]

Therefore, the Caliente Rail Draft EIS must address the full range of potential rail and truck transportation impacts to Las Vegas and Clark County.

Radiological Impacts of Routine Rail Shipments

In the Caliente Rail Draft EIS, DOE must provide a thorough evaluation of potential radiation exposures from routine transportation activities, the health effects resulting from such exposures, the potential socioeconomic impacts of routine radiation regardless of health effects, and any DOE plans for mitigating routine radiation exposures. The Draft EIS must address the potential for non-lethal health consequences, that is health effects other than, or in addition to, latent cancer fatalities. The Draft EIS should also provide a full discussion of relevant issues in the health physics community, including the current debates over: background radiation levels from natural and man-made sources; use of different dose conversion factors for different health effects and different population groups; the linear no threshold (LNT) theory; and the radiation hormesis theory.

Previous analyses by DOE and by Nevada concluded that the mostly rail national transportation scenario would result in lower overall radiological impacts of incident-free shipments, compared to the mostly legal-weight truck scenario. However, certain groups of workers and residents near rail stop locations would receive significant radiation exposures from routine rail operations. These impacts would be of special concern regarding workers involved in rail-to-rail or rail-to-truck transfer operations. The Draft EIS must particularly address the additional worker exposures, compared to the mostly rail scenario or the mostly truck scenario, that would result from unloading, loading, and safety inspections at a legal-weight truck cask, rail-to-truck intermodal transfer facility.

NRC regulations allow a certain amount of radiation to be emitted from shipping casks during routine operations and transport (10 mrem/hr 2 meters from the cask surface). The dose rate allowed under NRC regulations results in near-cask exposures of about 2.5 mrem per hour at 5 meters (16 feet), in measurable exposures (less than 0.2 mrem per

hour) at 30 meters (98 feet), and calculated exposures (less than 0.0002 mrem per hour) at 800 meters (one-half mile) from the cask surface. [FEIS, p. J-38] Cumulative exposures at these rates can result in adverse health effects for some workers and some members of public. Moreover, the very fact that these exposures would occur has been shown to cause adverse socioeconomic impacts, such as loss of property values, even though the dose levels are well below the established thresholds for cancer and other health effects.

The Repository Final EIS acknowledges that routine radiation from shipping casks poses a significant health threat to certain transportation workers. Train crew members and rail shipment escorts following the cask car in a chase vehicle could receive annual doses exceeding 2 rem per year. Rail yard crew members would receive annual doses of about 175 mrem. In the most extreme example, motor carrier safety inspectors inspecting legal-weight truck casks, could receive cumulative doses (200 rem over 24 years) large enough to increase their risk of cancer death by 10 percent or more, and their risk of other serious health effects by 40 percent or more. DOE proposes to control these exposures and risks by severely restricting work hours and doses for certain jobs. [FEIS, Pp. 6-43, J-44 to J-45]

Nevada studies estimate that cancer risks would be 50% higher than DOE estimates, and that other health risks ignored by DOE, such as risks to pregnant female workers and their unborn children, could be 7-10 times higher than cancer risks. NRC and DOE regulations currently restrict occupational exposures to 5 rem per year. The DOE has stated its intent that health risks should be further reduced by restricting worker exposures to 2 rem per year.

Under contract with the State of Nevada, M.H. Chew and Associates (CAI) conducted a study in 2001 to evaluate routine radiological impacts at maximum exposure locations in downtown Las Vegas along one of the existing Nevada rail routes that could be used for shipments to Yucca Mountain. From the Repository Draft EIS, a rail shipping scenario and route that would maximize opportunities for routine exposures were selected, together with locations where exposures would be maximized by proximity to casks during planned and unplanned stoppages.

The 2001 CAI study assumed 457 rail cask-shipments per year through downtown Las Vegas. Nevada currently estimates that there could be up to 357 rail cask-shipments per year through downtown Las Vegas if DOE constructs a new rail line to Yucca Mountain within the Caliente corridor.

The selected locations include parking lots and entrances to major commercial buildings. While members of the public are frequently present at these locations, the CAI analysis estimated the maximum annual dose at a particular location without regard to the actual presence of an exposed individual or individuals at that location.

CAI found that cumulative annual doses (457 hours) in the hotel parking lots ranged from 200 mrem (at 15 meters) to 36 mrem (at 35 meters). The cumulative annual doses (457 hours) at hotel-casino entrances ranged from about 28 mrem (at 40 meters) to about 1 mrem (at 160 meters). At the Clark County Government Center, the cumulative annual

dose (457 hours) is 114 mrem in the parking lot (at 20 meters), about 50 mrem at the nearest entrance (at 30 meters), and about 3 mrem at another entrance (at 100 meters). The 48-hour doses ranged from 21 mrem (at 15 meters) to 0.1 mrem (at 160 meters).

Nevada intends to update its routine radiation studies using the same assumptions Nevada has recommended that DOE use in the Caliente Draft EIS. Nevada expects that maximum cumulative annual doses at locations along the Union Pacific rail line through Las Vegas would be about 70-80 percent of the doses calculated in the 2001 CAI study.

Tens of thousands of Clark County residents and their real properties would be exposed to small additional radiation doses as a result of rail shipments to Yucca Mountain via the proposed new rail line within the Caliente corridor. Moreover, these shipments could continue for a period of four decades or more.

While additional studies are needed, the preliminary estimates of annual doses on private properties along rail routes constitute a major finding. The rail shipments to Yucca Mountain would clearly create elevated radiation exposure zones on private properties along the route. Further analysis of socioeconomic impacts would consider the extent to which DOE's proposed action constitutes a taking of property rights.

Impacts of Severe Rail and Truck Accidents

In the Caliente Rail Draft EIS, DOE must thoroughly and completely re-examine the impacts of severe rail accidents, and must specifically evaluate the consequences of a maximum reasonably foreseeable rail accident at an urban location in Nevada and at a rural location in Nevada. Since some legal-weight truck shipments would be required under the mostly rail scenario or under reasonable alternatives, the Caliente Rail Draft EIS must also include an updated analysis of severe truck accidents. DOE accident analyses must reflect the changes in expected radiological characteristics of repository shipments noted in our comments on description of the proposed action.

DOE must address Nevada's concerns about the misapplication of probabilistic risk analysis generally, and specifically address Nevada's concerns about the use of NUREG/CR-6672 in transportation accident impact analyses. This includes Nevada's contention that the maximum reasonably foreseeable accident scenarios for Nevada are not the same as for national transportation. Unique local conditions in Nevada require special consideration of truck and rail accidents involving commercial and military explosives; massive infrastructure failures resulting from severe earthquakes or floods; and a rail or truck cask involved in an accident with a military aircraft carrying live munitions or inert practice bombs.

DOE should also consider Nevada's overall recommendations for comprehensive risk assessment, risk management, and risk communication. These recommendations include full-scale cask testing to ensure that all cask designs used for Yucca Mountain shipments actually meet the NRC cask performance standards. Nevada also recommends a combination of full-scale testing, scale-model and component testing, and computer simulations to determine shipping cask failure thresholds.

In the Repository Draft and Final EISs, DOE acknowledged that a very severe highway or rail accident could release radioactive materials from a shipping cask, resulting in radiation exposures to members of the public and latent cancer fatalities (LCFs) among the exposed population, as well as costly cleanup and recovery operations.

In the Repository Draft EIS, DOE evaluated a “maximum reasonably foreseeable accident scenario” involving a rail cask at a generic urban location. Following the accident severity categories designated by the NRC Modal Study, DOE estimated the consequences of the most severe (category 6) rail accident using the RISKIND computer code. DOE estimated that the accident would release and disperse enough radioactive materials to inflict a collective population dose of 61,000 person-rem (enough to give 61,000 persons a one rem dose) and cause about 31 latent cancer fatalities.

In the Repository Final EIS, DOE changed the basis of its transportation risk assessment, relying solely upon a controversial new NRC contractor report prepared by Sandia National Laboratories (NUREG/CR-6672). As a result, the DOE' estimated consequence of the “maximum reasonably foreseeable accident scenario” involving a rail cask was reduced to a collective dose of 9,900 person-rem and 5 latent cancer fatalities. [FEIS, Pp. 6-45 to 6-47, 6-49 to 6-50]

The FEIS acknowledges that the July 2001 Baltimore rail tunnel fire was so severe that it would have resulted in a release of radioactive materials if a rail cask had been involved. [FEIS, p. 6-50] The FEIS also acknowledges that clean-up costs following a severe transportation accident could range from \$300,000 to \$10 billion. [FEIS, p. J-73]

As part of its review of the Repository Draft EIS (DEIS), the State of Nevada commissioned several SNF accident consequence analyses by Radioactive Waste Management Associates (RWMA). In 2000, RWMA reexamined the DEIS truck and rail accident estimates, using the RADTRAN and RISKIND computer models and a range of credible alternative assumptions. In 2001, RWMA estimated the consequences of a rail SNF accident similar to the July 2001 Baltimore rail tunnel fire. Also in 2001, RWMA studied the consequences of credible worst case truck and rail accidents at representative urban and rural locations along potential Nevada highway routes. These studies concluded that DOE systematically underestimated the consequences of severe transportation accidents. The results of these studies are reported in State of Nevada impact report, “A Mountain of Trouble: A Nation at Risk – Report on Impacts of the Proposed Yucca Mountain High-Level Nuclear Waste Repository,” which can be accessed on the web at <http://www.state.nv.us/nucwaste/yucca/impactreport.pdf> or obtained in hardcopy by request from the Nevada Agency for Nuclear Projects (phone: 775-687-3744).

RWMA conducted a study of credible worst case rail accidents at representative urban and rural locations along potential Nevada rail routes. Using the same Modal Study accident severity categories considered in the Repository Draft EIS, RWMA evaluated category 5 rather than category 6 accidents. RWMA assumed that the accidents involved hotter SNF than DOE assumed, and used higher cesium gap inventory estimates. Current rail cask designs assume shipment of 10-year cooled SNF. RWMA assumed that 5-year

cooled fuel, which has a 30 percent higher fission product inventory, represents a credible worst case accident source term. Table 1 compares the RWMA and DOE accident scenarios.

Table 1. Comparison of RWMA and Repository Draft EIS Accident Scenarios

Yucca Mountain DEIS	RWMA
“Maximum Reasonably Foreseeable” accident scenario based on probability	No estimate of probability
Risk and Consequence Assessments performed	Consequence Assessment only
Estimated consequences for severity category 6 truck and accidents in urban locations and a severity category 6 truck accident in a rural location	Estimated consequences for severity category 5 and 6 truck and rail accidents in urban and rural locations
26 year-cooled PWR fuel having a burnup of 39,560 MWD/MTU assumed	5 year-cooled PWR fuel having a burnup of 39,560 MWD/MTU assumed
0.3% of cesium inventory assumed in Fuel-Clad Gap	9.9% of cesium inventory assumed in Fuel-Clad gap
Meteorological conditions based on national averages	Site-specific meteorological averages used
CRUD inventory not explicitly modeled	Assumes that all CRUD is released to environment in the event of a rod failure
No discussion of economic impacts	Economic impacts, including cost of decontamination and evacuation, discussed

For each accident scenario, RWMA provided two separate consequence assessments: a category 5 and category 6 accident. The category 6 accident scenario is considered by the DOE to be most severe accident that could credibly happen en route to the Yucca Mountain Repository. For the specific accident locations chosen in this study, RWMA concentrated on the category 5 accident scenarios, after judging them to be the most credible severe accidents. Therefore, the accidents postulated in the RWMA report are not “worst-case” scenarios in the sense that one could not imagine a worse situation from happening. Rather, they are severe, yet credible, accidents, with the understanding that they are meant to be representative of the types of severe accidents that could happen in different areas of Nevada and the country.

For the urban accident evaluation, a location was identified on the Union Pacific (UP) rail line between Flamingo Avenue and Spring Mountain Road in Las Vegas. Along this stretch, the UP goes underneath I-15, and at one point is approximately 20 feet from the parking lot of a hotel. Potential accident scenarios include derailment of a runaway train and/or collision with a train hauling explosive or flammable materials. There is a petroleum pipeline running alongside the railroad tracks at this point, creating the

possibility for a severe thermal environment in the event of an accident. The same meteorological data used in the Las Vegas truck accident scenario was also employed here.

A rural rail accident location was also identified on the Union Pacific line that runs near I-80 in Elko County at the entrance to the Carlin Tunnel. This accident location was chosen because it is upwind of farming areas, a major river, and the City of Elko. An accident at this location would also likely cause the closure of I-80. Hazardous materials are routinely shipped along this route, including tanker shipments of propane to a terminal at Beowawe. In the event of a derailment involving cars containing flammable materials, the tunnel creates the possibility of a long-duration fire. Wind data was obtained from the Elko Airport in Elko, approximately 20 miles to the northeast of the proposed accident location.

Two computer programs, RISKIND and HotSpot, were used to develop contaminant plumes for the two rail accident scenarios. Both use standard Gaussian plume dispersion equations to estimate airborne concentrations and ground deposition of radionuclides. The SNF inventory obtained from RISKIND was used to develop the spent fuel inventory for use in both computer simulations.

RWMA assumed average, site-specific meteorological conditions and wind speeds. RWMA further assumed a severe impact would lead to a ground level puff release of radioactive particulates. The release estimates did not consider the accident scenario involving "fire-only" conditions, which would result in a more protracted release of material and a higher effective release height.

Following the rail accident, acute radiation doses due to inhalation of a passing radioactive cloud would be in the hundreds of rems close to the release location. This is a thousand times what a person receives from background radiation in a year. Thousands of people are likely to be in the downwind path. RWMA estimated that over 138,000 persons would be affected by a severe rail accident releasing radioactive material in Las Vegas. Persons indoors would also be exposed. If ventilation systems were not shut off, radioactive particulates would settle within hotels and other buildings, contaminating rugs, furniture, beds, and causing a radiation dose to those inside.

Discussions with emergency personnel in Las Vegas and Clark County clearly indicate the accident would overwhelm local response capabilities. Before local emergency responders could accurately assess the problem, the radioactive plume would have already contaminated an extensive area. Radioactive particulates settling on roads and highways are likely to be spread by traffic, possibly contaminating distant locations and extending the area of contamination past that assumed in this study. This may result in the contamination of many more people than was estimated in the report.

Given the high number of people exposed, local responders would not be able to identify, let alone effectively quarantine, contaminated people. Thus, it would be extremely difficult to stop the spread of contamination. Initial decontamination efforts would probably be limited to emergency responders and people in the closest vicinity of the

accidents. Decontamination of the affected population in general would be a massive effort.

Evacuation would be difficult at best. Spontaneous evacuation by people not in the contaminated area would probably occur in great numbers, making the targeted evacuations much more difficult to complete. At a minimum, the evacuation of highly contaminated areas would be necessary. For a rail accident, evacuation would have to be in a radius greater than one kilometer; this would represent a large number of people if the accident took place near the Las Vegas Strip. In both Las Vegas and Elko evacuation would be complicated by the need to close the segments of I-15 and I-80 contaminated by the plume.

In the case of an accident in Las Vegas, consideration would have to be given to closing McCarran airport in order to prevent the migration of contaminated persons. Alternately, all passengers would have to be screened for contamination. This would require a huge amount of resources that could be better utilized dealing with the major issues.

The incident would overwhelm the capability of the local medical community. Blood and urine samples of contaminated people should be taken to track the levels of contamination and exposure, but this would be very difficult given the number of contaminated and potentially contaminated individuals. Mental health resources would be overwhelmed as well.

Unless radionuclides, particularly cesium, were removed from surfaces, remaining residents would be exposed for long time periods. Complete decontamination would be prohibitively expensive and would also expose workers; a balance would take place between clean-up costs and long-term radiation exposures. RWMA chose the EPA's Protective Action Guide as a criteria for decontamination; assuming that a person should not receive more than 5 rems over a 50-year period, including initial inhalation due to the passing cloud. If areas are not decontaminated, RWMA estimated between 6,000 and 41,000 latent cancer fatalities would result from exposure to radiation resulting from the accident in Las Vegas, depending on the risk model. If radioactive contaminants were not remediated, there would be continuous direct gamma exposure to remaining residents. Further, this would result in a tremendous concomitant economic cost to the tourist industry. Social stigma costs are beyond the scope of this report.

Using the economic model of RADTRAN 5, evacuation and decontamination in Las Vegas would cost \$15.4 billion for the category 5 accident evaluated by RWMA. The same costs for the category 6 accident described in the DEIS would be \$189.7 billion. These potential costs greatly exceed the amount of insurance coverage held by nuclear utilities or the Department of Energy. This raises the question of how such an expensive endeavor would be financed. Government financing of clean-up would require an act of Congress, which would significantly delay remedial action.

While the population densities are obviously lower in a rural area, a rail accident near the Carlin tunnel, in Elko County, would also have serious consequences. RWMA did not separately calculate decontamination costs for the Elko County accident, but previous studies indicate cleanup could cost as much as \$500 Million to \$1 Billion. [Sandquist, et

al., 1985] If areas are not decontaminated, between 100 and 600 latent cancer fatalities would result from exposure to radiation resulting from the rail accident.

I-80 is the main route across Northern Nevada, as well as a major cross-country thoroughfare. A rail accident that spread radioactive contamination could force closure of I-80 and either leave cars trapped or have vehicles spread the contamination miles down the highway. A rail accident near the Carlin tunnel, in a canyon adjacent to the Humboldt River, would lead to contamination of the river bed and water for miles downstream and leading to accumulations in slowly moving sections of the river. Use of the river for recreation or drinking would be curtailed for years to come.

The RWMA study shows the potentially disastrous consequences of an accident leading to the release of radioactive material from a spent fuel transportation cask. It also underscores the importance of preparation of emergency response for such an accident. Acknowledgement of the potential for disaster, even if the probabilities are not high, is important in attempting to prepare for an unprecedented spent fuel transportation campaign.

The tables below summarize the findings of the RWMA study. Table 2 presents a comparison of the Las Vegas rail accidents with the urban ‘maximum reasonably foreseeable’ accident scenarios listed in the DEIS. Table 3 presents impact estimates for the Elko County accidents. DOE did not evaluate a rural ‘maximum reasonably foreseeable’ accident scenario in the DEIS. The consequences estimated by RWMA are significantly higher than those estimated in the DEIS, primarily due to the assumption of a higher population density and an increased release fraction for cesium.

Table 2. Comparison of RWMA and Repository Draft EIS
Urban Rail Accident Consequence Assessments

	Urban Rail Accident			
	State of Nevada, Cat.5 ^a	State of Nevada, Cat.6 ^a	YM DEIS, Cat. 5 ^a	YM DEIS, Cat. 6 ^a
Acute (24-hour) Population Dose (person-rem) ^b	26,171	not calculated	Not calculated	Not calculated
Expected Latent Cancer Fatalities ^c	13-444	not calculated	Not calculated	Not calculated
1-year Population Dose (person-	915,968	not calculated	Not calculated	61,000

rem) ^b				
Expected Latent Cancer Fatalities ^c	458-2,931	not calculated	Not calculated	31
50-year Population Dose (person-rem) ^b	12,771,207	not calculated	Not calculated	Not calculated
Expected Latent Cancer Fatalities ^c	6,386-40,868	not calculated	Not calculated	Not calculated
Dose to Maximally Exposed Initial (rem) ^d	22.5	224	Not calculated	26
Area contaminated to greater than 5 rem long-term dose (km ²)	104.7	1208.4	Not calculated	Not calculated

Table 3. Comparison of RWMA and Repository Draft EIS Rural Rail Accident Consequence Assessments

	Rural Rail Accident			
	State of Nevada, Cat.5 ^a	State of Nevada, Cat.6 ^a	YM DEIS, Cat. 5 ^a	YM DEIS, Cat. 6 ^a
Acute (24-hour) Population Dose (person-rem) ^b	393	not calculated	not calculated	not calculated
Expected Latent Cancer Fatalities ^c	0.2-1.3	not calculated	not calculated	not calculated
1-year	13,760	not	not	not

Population Dose (person-rem) ^b		calculated	calculated	calculated
Expected Latent Cancer Fatalities ^c	7-44	not calculated	not calculated	not calculated
50-year Population Dose (person-rem) ^b	191,859	not calculated	not calculated	not calculated
Expected Latent Cancer Fatalities ^c	96-614	not calculated	not calculated	not calculated
Dose to Maximally Exposed Initial (rem) ^d	26.9	267	not calculated	not calculated
Area contaminated to greater than 5 rem long-term dose (km ²)	118.6	1202	not calculated	not calculated

The Nevada-sponsored study of the July 2001 Baltimore rail tunnel fire concluded that it would have resulted in significant release of radioactive materials. It burned for more than three days with temperatures as high as 1500°F. A single rail cask in such an accident could have released enough radio-cesium to contaminate an area of 32 square miles. Failure to cleanup the contamination, at a cost of \$13.7 billion, would cause 4,000 to 28,000 cancer deaths over the next 50 years. Between 200 and 1,400 latent cancer fatalities would be expected from exposures during the first year. An NRC study of the Baltimore accident concluded there would not have been a radioactive release if the accident had involved a rail cask using a welded internal canister. State of Nevada contractors are revising their original report, and preparing a critique of the NRC study for publication later in 2004. The Caliente Rail Draft EIS should include a thorough review of the Baltimore fire studies by NRC and Nevada.

The Nevada Agency for Nuclear Projects has recommended to DOE the following measures for comprehensive transportation risk management:

1. A comprehensive risk assessment (CRA) should cover all transportation system phases, events, and consequences as suggested by Golding and White (1990).
2. CRA calculates probabilities only where there is existing data, theories, and models that are sufficient to support use of rigorous quantitative methods, and uses sensitivity analysis to illustrate impacts of differing assumptions and variations in quality of data.
3. CRA should be used as a working risk management tool throughout the life cycle of the Yucca Mountain project, with ongoing public participation
4. CRA should be the basis of risk communication throughout life cycle of the Yucca Mountain project.

Comprehensive risk assessment is a precursor of a growing trend in risk analysis and regulation away from “point estimates” in which a single number is presented as a meaningful risk estimate. Instead, a range of possibilities is presented with an associated likelihood, when that likelihood may be estimated. Nevada recommends that DOE use comprehensive risk assessment as a substitute for the probabilistic risk assessment approach used in NUREG/CR-6672.

The Nevada Agency for Nuclear Projects has recommended to DOE the following measures for accident prevention and emergency response:

1. Maximize use of regional organizations such as Western Governors Association (WGA) and Western Interstate Energy Board (WIEB) for planning, implementation, and program evaluation.
2. Coordinate with relevant corridor Indian Tribes and local governments.
3. Develop comprehensive safety program modeled after WGA-State-DOE WIPP Transportation Program.
4. Adopt WIEB (September 1994) proposal for evaluation and final designation of preferred shipping routes.
5. Implement Section 180(c) for financial assistance to state, local, & tribal governments through rulemaking.
6. Revise DOE Plan for Privatization of Transportation Services to emphasize safety and public acceptance.

The Nevada Agency for Nuclear Projects has recommended to DOE the following measures for development of a preferred transportation system for all shipments to Yucca Mountain:

1. Develop dual purpose casks for at-reactor storage and transport.
2. Ship the oldest fuel assemblies first, that is, those with at least 20 years at-reactor cooling.
3. Adopt the transportation modality that makes maximum use of rail.
4. Make mandatory use of dedicated trains, special safety protocols, and special car designs as recommended by American Association of Railroads.
5. Insist that DOE and carriers make early identification of preferred cross-country mainline routes in consultation with stakeholders.
6. Encourage early involvement of corridor states and Indian Tribes, including financial assistance under Section 180(c), as part of the route selection process.

Regarding full-scale cask testing, NRC regulations specify rigorous accident performance standards for spent fuel shipping casks. NRC does not require full-scale physical testing to demonstrate compliance with these regulations, and none of casks currently in use have been tested full-scale. NRC has proposed demonstration testing of one rail cask, and possibly also one truck cask, as part of the Package Performance Study (PPS). The State of Nevada has recommended an alternative approach to cask testing. Nevada also recommends greater involvement by the Federal Railroad Administration in development of PPS testing protocols. Because of the extremely heavy weight of the new cask-railcar combinations (455,000 lbs as opposed to 255,000 lbs for a normal railcar), NRC should not assume that existing data reflect the type, severity, and frequency of accidents that may occur with the new railcars.

The Nevada Agency for Nuclear Projects has recommended to DOE and NRC the following measures for full-scale cask testing:

1. A meaningful stakeholder role in development of testing protocols, selection of test facilities, and input on personnel.
2. Full-scale regulatory testing (sequential drop, puncture, fire, and immersion) prior to NRC certification, or DOE procurement, of all casks designs used for shipments to Yucca Mountain.
3. Additional testing (casks, components, models) and computer simulations to determine cask performance in extra-regulatory accidents and to determine failure thresholds.
4. Reevaluation of the Modal Study findings, and if appropriate, revision of NRC cask performance standards.
5. Evaluation of the costs and benefits of destructive testing of a randomly-selected production model cask.

The Association of American Railroads (AAR) has endorsed full-scale cask testing, and has specifically recommended to the NRC that the testing program be designed to determine cask failure thresholds, and compare these failure thresholds with the forces generated in real world accidents. The AAR comments on cask testing are included in [Attachment VI](#).

Impacts of Successful Terrorist Attacks or Sabotage Incidents

In the Caliente Rail Draft EIS, DOE must thoroughly and completely re-examine the impacts of successful terrorist attacks or sabotage incidents against rail shipments. Since some legal-weight truck shipments would be required under the mostly rail scenario or under reasonable alternatives, the Caliente Rail Draft EIS must also include an updated analysis of terrorism and sabotage against truck shipments. Multiple shipments of legal-weight truck casks by rail (5 casks per train) to an intermodal facility in Nevada, as DOE suggests in its March 10, 2004, Supplemental Analysis, represent a special case for vulnerability assessment. DOE analyses must reflect the changes in expected radiological characteristics of repository shipments noted in our comments on description of the proposed action. DOE should also consider Nevada's recommendations for enhanced

shipment security and consequence assessment as presented in Nevada's petition to the NRC for rulemaking, Docket PRM 73-10, in June, 1999.

According to studies sponsored by DOE and NRC in the 1980s, an off-the-shelf, Korean War-era, military demolition charge could breach the wall of a truck cask, deeply penetrate the cask interior, and eject one-percent of the spent fuel cargo, including a small but dangerous respirable release. U.S. Army peer review of these studies confirmed the findings. The Army reviewers added that the reference weapon would completely perforate current-generation truck casks (which have thinner walls than the obsolete cask that was used during this test) and that the use of two explosive devices, one to breach the cask wall and another to disperse the cask contents, could significantly increase the amount of radioactive materials released. Other reviewers commented that commercial shaped charge explosives and military antitank weapons could cause equal or greater damage to a cask and its contents, and that the release and dispersion of radioactive materials could be greatly increased if coupled with the use of incendiary devices.

In 1999, DOE sponsored a study of cask sabotage by Sandia National Laboratories (SNL) in support of the Repository Draft EIS. SNL re-evaluated the earlier tests, and conducted additional simulations and analyses, but did not perform any additional full-scale or scale model tests. This research concluded both truck and rail casks could be breached, by military shaped charges and by antitank weapons. SNL concluded that the respirable release would be six times larger than previously reported, due mainly to blowdown from the pressurized fuel rods. The SNL study also found that if the weapon used fully perforated the cask, the amount of respirable radioactive material released could be ten times greater than even these new release estimates.

In 1998, an additional test of rail cask vulnerability was sponsored by a private company, International Fuel Containers, at the U.S. Army Aberdeen Test Center. In that test, U.S. Army experts demonstrated that a TOW missile warhead could breach a large, nodular cast iron cask, of the type currently used for rail transport in Europe. While the European cask that was tested is not certified for transport use in the U.S., it is similar to the new U.S. rail casks in its overall design, wall thickness, and capacity. A study prepared for the State of Nevada compared vulnerability of cask walls constructed of iron, steel, and steel-lead-depleted uranium. That study concluded the new U.S. casks being designed for rail shipments to Yucca Mountain would be equally vulnerable to an attack using a TOW missile, and that the TOW missile would be expected to completely perforate the truck cask design assumed for Yucca Mountain shipments.

In the Repository Draft EIS, DOE estimated that a successful attack on a GA-4 truck cask in an urbanized area under average weather conditions would result in a population dose of 31,000 person-rem, causing about 15 cancer fatalities among those exposed to the release of radioactive materials. An attack using the same weapon against a large rail cask under the same conditions was estimated to result in a population dose of 4,900 person-rem, causing about 2.4 cancer fatalities. [DEIS, Pp. 6-33 to 6-34]

In the Repository Final EIS, DOE updated its sabotage analysis, assuming the cask contained more radioactive SNF, assuming more radioactive materials released, and assuming a higher future average population density for U.S. cities. The Repository Final

EIS estimated that the same successful attack on a truck cask would result in a population dose of 96,000 person-rem and 48 latent cancer fatalities. An attack using the same weapon against a large rail cask under the same conditions was estimated to result in a population dose of 17,000 person-rem, causing about 9 cancer fatalities. [FEIS, Pp. 6-50 to 6-52] In neither case did DOE evaluate any environmental impacts other than health effects. In particular, DOE ignored the economic impacts of a successful act of sabotage in both the Repository Draft and Final EIS. Cleanup requirements would likely be similar to a worst-case transportation accident, estimated by DOE to cost between \$300,000 and \$10 billion.

Analyses prepared for Nevada by RWMA estimated sabotage impacts would be considerably greater than the DOE estimates. RWMA replicated both the Draft and Final EIS sabotage consequence analyses, using the RISKIND model for health effects and the RADTRAN model for economic impacts, the SNL study average and maximum inventory release fractions, and a range of population densities and weather conditions.

The Nevada-sponsored study of the Repository Final EIS scenario concluded that an attack on a GA-4 truck cask using a common military demolition device could cause 300 to 1,800 latent cancer fatalities, assuming 90% penetration by a single blast. A similar attack on a large rail cask could cause 50 or more latent cancer fatalities. Full perforation of the truck cask, likely to occur in an attack involving a state-of-the art anti-tank weapon, such as the TOW missile, could cause 3,000 to 18,000 latent cancer fatalities. Cleanup and recovery costs would exceed \$5 billion for the attack on a rail cask and \$10 billion for the attack on a truck cask.

Beyond attacking a cask with explosives, terrorists might commit radiological sabotage by causing a devastating transportation accident. Published terrorism risk assessments have not, to date, considered the possibility that an intentional, human-initiated event could disperse radioactive material from a shipping cask, let alone consider the implications of a combined bombing and accident tactic. Concerns about terrorism have prompted calls for reappraisals of risk management and assessment practice in order to better understand risk.

Well before the terrorist suicide attacks of September 11, 2001, concern about the terrorist threat to repository shipments led Nevada's Attorney General to file a petition for rulemaking with the NRC in June 1999. In the petition, Nevada documented the vulnerability of shipping casks to high-energy explosive devices. Nevada also submitted evidence that shipments to a national repository would be dramatically different from past shipments in the United States, and that these differences would create greater opportunities for terrorist attacks and sabotage. The petition requested a general strengthening of the current transportation safeguards regulations and a comprehensive reexamination of the consequences of radiological sabotage.

The NRC published Nevada's petition (Docket PRM-73-10) in the *Federal Register* on September 15, 1999, and accepted public comments through February 2000. The Western Governor's Association endorsed Nevada's petition on behalf of 18 western States. Five other states (LA, MI, OK, VA, and WV) also endorsed all or part of the petition. Four

years after the close of the comment period, and more than two years after the 9/11 attacks, the NRC has still not officially responded to Nevada's petition.

The State of Nevada has summarized its terrorism and sabotage concerns in two main areas: Pre-September 11, 2001 concerns (prevention and mitigation regulations and risk assessment protocols); and post-September 11, 2001 concerns (emerging factors relative to terrorism and new requirements for risk assessments). These are summarized below.

The State of Nevada has petitioned the NRC to amend the following regulations to better deter, prevent and mitigate consequences of radiological sabotage against spent fuel shipments:

1. Reexamine Design Basis Threat for Radiological Sabotage - 10 C.F.R. 73.1(a)(1) with the intention of creating a transportation specific model at least as robust as the fixed site model.
2. Expand Definition of "Radiological Sabotage" - 10 C.F.R. 73.2.
3. Strengthen Requirements for Advance Approval of Routes - 10 C.F.R. 73.37(b)(7).
4. Adopt New Requirements for Planning and Scheduling - 10 C.F.R. 73.37(b)(8).
5. Strengthen Escort Requirements for Shipments by Road - 10 C.F.R. 73.37(c).
6. Strengthen Escort Requirements for Shipments by Rail - 10 C.F.R. 73.37(d).
7. Adopt New Regulation to Require that All Rail Shipments be made in Dedicated Trains - 10 C.F.R. 73.37(d).

The State of Nevada has petitioned the NRC to conduct a comprehensive assessment of consequences of terrorist attacks that have the capability for radiological sabotage:

1. Assess attacks against transportation infrastructure used during nuclear waste shipments.
2. Assess attacks involving capture of a nuclear waste shipment and use of high energy explosives against a cask or casks.
3. Assess direct attacks upon a nuclear waste shipping cask or casks using antitank missiles or other military weapons.

In light of lessons learned from 9/11, the State of Nevada recommends that DOE and NRC transportation terrorism risk assessments consider such emerging factors as:

1. Attacks involving multiple weapons and/or combinations of weapons designed to maximize release and dispersal of radioactive materials.
2. Attacks involving coordinated use of hijacked vehicles, including tanker trucks.
3. Attacks involving large groups of well-trained adversaries, including suicide attacks.
4. Attacks involving terrorist infiltration of trucking and railroad companies (or what is known as the active insider).
5. Attacks at locations with a highly symbolic social, political, or economic value.

In light of lessons learned from 9/11, the State of Nevada recommends that DOE and NRC transportation terrorism risk assessments address:

1. Standard socioeconomic impacts, including cleanup and disposal costs and opportunity costs to affected individuals and business.
2. Economic losses resulting from public perceptions of risk and stigma effects.
3. Impacts on emergency responders and recovery workers, including long term monitoring, care, and health benefits for these first responders.

Railroad Safety Impacts

The Draft EIS must comprehensively assess impacts to safety from issues raised in the lawsuit brought by workers and employees against the Burlington Northern and Santa Fe Railway Corporation [filed in May, 2004 in the U.S. District Court for the District of Iowa, Western Division]. That petition is incorporated by reference into these comments and attached herewith as **Attachment VI**. The operational safety deficiencies alleged in the litigation are systemic in nature and have direct relevance to the operation of any rail line to Yucca Mountain. The suite specifically addresses increased risks and the potential for accidents involving spent fuel shipments as a result of railroad safety violations and worker intimidation. The Draft EIS must address these safety deficiencies and assess the impacts on risk, operations, and overall performance. Further, the Draft EIS must address these issues in a comprehensive fashion (i.e., their effects on the nationwide Yucca Mountain rail transportation system), not just in relation to the proposed Nevada rail spur.

Implications of Price Anderson Act Liability System

In the Caliente Rail Draft EIS, DOE must provide a thorough and updated overview of the Price Anderson Act (PPA) liability system, other nuclear insurance programs, and their combined applicability to the Yucca Mountain transportation system. The Draft EIS should outline the major provisions of PAA and their specific application to SNF and HLW transportation accidents and incidents.

Special attention must be given to PAA coverage of DOE shipments of civilian SNF, assuming DOE takes title to the SNF when it leaves the reactor site; PAA coverage of DOE SNF and HLW shipments from DOE facilities; any PAA coverage limitations regarding DOE contractor activities; PAA coverage of accidents or incidents involving carrier or DOE contractor negligence; and PAA coverage of terrorist attacks and/or radiological sabotage. The Draft EIS should also provide an overview of non-governmental nuclear insurance pools and their applicability to the Yucca Mountain transportation system.

The Caliente Rail Draft EIS must also specifically discuss application of PAA and other nuclear insurance to SNF and HLW shipments from the 77 shipping sites to Caliente on existing railroads, and any differences in application of PAA and other nuclear insurance to SNF and HLW shipments on the proposed new rail line from Caliente to Yucca

Mountain. The Draft EIS must specifically identify any DOE actions or decisions regarding the design, construction, ownership and operation of the proposed rail line that would affect or limit application of PAA.

ATTACHMENT I
NEVADA ATTORNEY GENERAL'S REQUEST FOR A CEQ INVESTIGATION
OF THE ENERGY DEPARTMENT'S USURPATION OF PROCEDURAL LAWS
FOR DEVELOPING A 319-MILE RAIL LINE IN NEVADA



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April 22, 2004

Honorable James L. Connaughton, Chairman
U.S. Council on Environmental Quality
722 Jackson Place N.W.
Washington, D.C. 20503

**RE: CEQ Investigation of the Energy Department's Usurpation of
Procedural Laws for Developing a 319-Mile Rail Line in Nevada**

Dear Mr. Connaughton:

On April 8, 2004, the Department of Energy ("DOE") issued a Notice of Intent ("NOI") to prepare an Environmental Impact Statement ("EIS") for the alignment, construction, and operation of a 318-mile rail line from an interchange point in Caliente, Nevada to the proposed geologic repository for high-level nuclear waste and spent nuclear fuel at Yucca Mountain, Nevada, in Nye County. 69 Fed. Reg. 18565. The purpose of the proposed new rail line is to facilitate the interstate rail transportation of tens of thousands of tons of high-level waste and spent fuel on a nationwide basis and within Nevada, involving many thousands of shipments. According to DOE, "construction of the rail line would require the clearing and excavation of previously undisturbed lands, and the establishment of borrow and spoils areas." *Id.* at 18566. An intermodal transfer facility would also be built in conjunction with the rail line, and additional rail connections would be needed for many nuclear power plants in other states. Indeed, what DOE proposes in the NOI is nothing less than the largest new rail project in North America in many decades.

The State of Nevada objects to the NOI because, in assigning to itself "lead agency" status for this massive transportation project, *id.* at 18568, DOE appears to have blatantly preempted the exercise of exclusive regulatory authority by the Surface Transportation Board ("STB," or "Board") over this new

rail line and the precise activities proposed by DOE in the NOI. Accordingly, Nevada respectfully requests that the CEQ investigate this matter and, if appropriate, issue corrective instructions to DOE.

Discussion

As articulated in the NOI, DOE's proposal for the alignment, construction and operation of a rail line falls squarely within the longstanding exclusive regulatory jurisdiction of the STB over rail transportation under the Interstate Commerce Act ("ICA"), 49 U.S.C. §§ 10101 *et seq.*, and any such project would require the prior approval of the STB. 49 U.S.C. § 10901. A person "may construct an additional railroad line," "provide transportation over, or by means of, an extended or additional railroad line," or "in the case of a person other than a rail carrier, acquire or operate an extended or additional railroad line" "only if the Board issues a certificate authorizing such activity." 49 U.S.C. §§ 10901(a)(2), (3), and (4) (emphasis added).

Indeed, it is the *Board* which must commence a proceeding to construct a new rail line, not DOE. Such a proceeding "begins when an application is filed" with the Board. 49 U.S.C. § 10901(b). The Board then gives public notice and notifies the Governor of any affected State of the beginning of the proceeding. *Id.* DOE has filed no such application, and it took it upon itself to issue a Record of Decision announcing the new rail corridor in April of this year. 69 Fed. Reg. 18557 (April 8, 2004). Indeed, DOE's underlying Final Environmental Impact Statement for the Yucca Mountain repository and its accompanying national transportation project – the putative foundation for DOE's Nevada rail corridor Record of Decision – does not list the Board as an agency with which DOE even *consulted* in preparing these environmental documents. DOE/EIS 0250 at Vol. II, App. C.

The STB's regulations implementing the requirements of the ICA are at Title 49, Chapter X of the Code of Federal Regulations. The "purpose" of these regulations is "to assure adequate consideration of environmental and energy factors in the Board's decisionmaking process pursuant to the National Environmental Policy Act ["NEPA"]... and related laws...." 49 C.F.R. § 1105.1. Absent a finding that "a service or transaction is not within the STB's jurisdiction," the NEPA process for major federal actions is commenced *by the Board*. 49 C.F.R. § 1105.5. DOE has made no finding (nor can it) that the proposed new rail line is not within the Board's jurisdiction.

The STB's regulations also contain, at Part 1105, "Procedures for Implementation of Environmental Laws." CEQ of course actively participated in proceedings resulting in the updating and revising of Part 1105. See Ex Parte No. 55 (Sub-No.22A) *Implementation of Environmental Laws*, 7 I.C.C. 2d 807 (1991).³ Those regulations require that a prospective rail applicant such as DOE

³ The Interstate Commerce Commission ("ICC") was terminated by the ICC Termination Act of 1995, P.L. 104-88, 109 Stat. 803, effective December 31, 1995. That

must provide STB's Section of Environmental Analysis "with written notice of its forthcoming proposal at least 6 months prior to filing its application." 49 C.F.R. § 1105.10(a)(1). Nevada is aware of no such written notice having been provided the Board by DOE. The regulations also require that, when an Environmental Impact Statement is needed for a proposed rail action, "*the Board* will publish in the Federal Register a notice of its intent to prepare an EIS...." 49 C.F.R. § 1105.10(a)(2) (emphasis added). The *Board* then solicits public comments and publishes a notice of the final scope of the EIS, indicating if there will be a cooperating agency or agencies involved in preparing the EIS. *Id.* DOE has stood this mandatory procedural process on its head, issuing by itself the NOI and indicating only that it "expects to invite" the STB to be a cooperating agency. 69 Fed. Reg. at 18565. Part 1105 contains numerous other procedural requirements that DOE is now well poised to ignore.

Even if the above laws and regulations were somehow discretionary, CEQ regulations provide that uncertainties over lead agency status "shall" be resolved "by letter or memorandum." 40 C.F.R. §1501.5(c). To Nevada's knowledge, no such written resolution exists between DOE and the STB. CEQ regulations also provide a number of requirements to facilitate agency cooperation, 40 C.F.R. §1501.6, most of which appear to have been circumvented by DOE. Yet, DOE has formally adopted CEQ's NEPA regulations. 10 C.F.R. §§ 1021.101 and 1021.103. Most ironically, DOE's NEPA implementation regulations specifically require adherence to CEQ's above-cited requirements for lead agency memoranda and for interagency cooperation. See 10 C.F.R. § 1021.342.

For its part, DOE has historically submitted to ICC jurisdiction and participated in cases seeking relief involving transportation of spent fuel and high level waste under the Nuclear Waste Policy Act, 42 U.S.C. §§ 10101 *et seq.* See, e.g., *Commonwealth Edison v. Aberdeen & Rockfish RR., et al.*, 2 I.C.C. 2d 642 (1986) *rev'd and remanded*, 856 F.2d 646 (D.C. Cir. 1989); *DOE & DOD v. B & O Railroad Co., et al.*, 10 I.C.C. 2d 112 (1994), and cases cited therein. See also, *Railroad Interterritorial Agreement*, 2 I.C.C. 2d 86, 90 (1986).

For all the above reasons, and pursuant to 40 C.F.R. § 1501.5(e), Nevada respectfully asks CEQ to investigate DOE's NOI and its unilateral undertaking of the lead agency role in the proposed Caliente rail line in Nevada, contrary to applicable federal statutory requirements and the regulations of the STB, CEQ, and of DOE itself. For your convenience, I have attached copies of the NOI and DOE's related Record of Decision on the Caliente corridor. Please call me if you have any questions.

act created the STB as the successor agency to assume responsibilities under the ICA, as amended.

Thank you for your consideration of this matter of great urgency to Nevada's citizens.

Sincere regards,

BRIAN SANDOVAL
Attorney General

c: Honorable Spencer Abraham, Secretary
U.S. Department of Energy

Honorable Roger Nober, Chairman
Surface Transportation Board

ATTACHMENT II

**Testimony of Roger Nober
Chairman of the Surface Transportation Board
House Committee on Transportation and Infrastructure
Subcommittee on Railroads
Hearing on Transportation of Nuclear Waste to Yucca Mountain Repository
9:30 a.m. March 5, 2004 Las Vegas, Nevada**

Good morning Chairman Quinn, Ranking Member Brown, and Members of the Subcommittee.

My name is Roger Nober, and I am Chairman of the Surface Transportation Board. I appreciate the opportunity to testify before you today at this field hearing about the federal jurisdictional issues and railroad operational and safety concerns regarding the transportation of nuclear waste to the proposed Yucca Mountain repository.

The issues which are the subject of this hearing today regarding the construction of a proposed rail line through Nevada to serve the Yucca Mountain repository and the transportation of spent nuclear fuel and high level radioactive nuclear waste from sites throughout the United States are important not only to the citizens of Nevada but to the nation as a whole. I commend the Members of the Subcommittee for holding this significant hearing.

At the outset, it is important to emphasize that the Department of Energy has not yet determined whether rail will be the primary means of transportation to serve the Yucca Mountain facility. If the Department of Energy does select rail as the primary means of transport for the Yucca Mountain facility, then, as I will discuss below, it has several options for how it could choose to structure that transportation, including filing with the Board to authorize the construction of a new rail line serving that facility.

Furthermore, I must note that the Board is an adjudicatory body, and were the

Department of Energy to file for approval of the construction of a rail line to the Yucca Mountain Repository with the Board, I cannot determine in advance how the Board would act on such a filing.

With these limitations in mind, I would first like to provide the Subcommittee with an overview of the Board and its responsibilities. Next, I will discuss the current regulatory regime that exists for the licensing of new rail lines. Finally, I will outline some of the issues that may be raised if the Department of Energy were to choose rail as the primary means of transportation to serve the Yucca Mountain facility.

Overview of the STB

As all of you are aware, this Committee created the Surface Transportation Board when it eliminated the Interstate Commerce Commission in the ICC Termination Act of 1995. The Congress determined that the Board should be a decisionally independent agency administratively affiliated with the Department of Transportation. As such, the Board serves as both an adjudicatory and regulatory body. The Board was created as a three-person, bi-partisan entity, but for the last nine months I have been its only Member.

The Board's primary mission is economic regulation of railroads, but the Board also has jurisdiction over other modes of surface transportation. With respect to railroads, the Congress vested the Board with the fundamental missions of reviewing railroad mergers and line sales, resolving railroad rate and service disputes, and reviewing railroad abandonment and construction applications. The Board has some authority over certain trucking company, moving van, and non-contiguous ocean shipping company rate matters; certain intercity passenger bus company structure, financial, and operational matters; and rates of pipelines carrying commodities other than oil, gas, or water.

Importantly, in each of the areas over which the Board has jurisdiction, that jurisdiction is exclusive.

The Board's Authority over Rail Carriers

In general, the Board's jurisdiction over rail carriers is set forth in Chapter 105 of Title 49. The Board has jurisdiction over "transportation by [a] rail carrier" (section 10501 (a)(1)) that is providing common carrier railroad transportation (section 10102(5)) over any "part of the interstate rail network" (section 10501(a)(2)).

The term "common carrier" is not defined in the statute, but is defined by common law and agency precedent. The fundamental test for whether rail track and services are common carrier in nature is whether there is a "holding out" to serve the public at large. A railroad that is a common carrier has a "common carrier obligation" to provide service to any and all shippers along the line that request service or may want service in the future. 49 U.S.C. 11101(a).

Persons who are, or intend to become, common carriers - and thus subject to the Board's jurisdiction - are subject to the Interstate Commerce Act's regulatory provisions, including the general requirement in 49 U.S.C. 10901 that they obtain advance authorization from the Board before constructing or operating a new or extended line of railroad. In general, this licensing requirement applies to all of such carriers lines, including both "main" lines and "branch" lines, i.e., those lightly used lines over which carriers provide common carrier service to shippers in what are often rural communities.

There are exceptions to the general requirement that common carriers obtain a regulatory license prior to constructing new track. Under 49 U.S.C. 10906, for example, no Board authorization is required when a railroad that is already licensed to provide

service wishes to construct so-called "auxiliary tracks." While the statute enumerates a number of different classes of such track, in practice the Board has applied the same tests for each to determine whether track of a common carrier qualifies for this exception. Track that is used for loading, unloading, storage or switching operations that are "incidental to, but not actually and directly used" in the carrier's line-haul transportation may qualify for this exception.

To determine whether a particular common carrier rail track would be "auxiliary track," and thus could be constructed without a license, the Board and the courts look at relevant "indicia" of the track itself (such as the track's length, the weight of rail, etc.), as well as the track's use and, most importantly, whether the track would open up new service territory for the operating rail carrier. If the track would be something more than auxiliary to existing service, then the section 10906 exception is not available. But if section 10906 does apply, then this so-called "spur" track, although not subject to Board licensing, is subject to other aspects of Board regulation.

The Board's jurisdiction over common carrier railroad lines that are part of the national rail network is exclusive (49 U.S.C. 10501(b)), and the statute preempts state and local jurisdiction from applying any overlapping laws and regulations. Thus, state and local permitting or pre-clearance requirements (including environmental requirements) are preempted from applying to such rail carriers because by their nature they interfere with interstate commerce. This broad statutory Federal preemption applies even to construction of "auxiliary" track under section 10906, which is part of the national rail network, but for which a Board license is not needed and for which the Board does not conduct an environmental review.

Construction and operation of private track - which is not covered by the Interstate Commerce Act and not subject to any aspect of the Board's jurisdiction - does not require any regulatory authorization by the Board at all. While the term "private track" is not defined in the statute, Congress described private track as follows in its Conference Report on the ICC Termination Act: "[N]on-railroad companies who construct rail lines to serve their own facilities [exclusively]... are not required to obtain agency approval to engage in such construction."

The courts and the Board have long recognized that wholly private operations conducted over private track are not subject to the agency's jurisdiction. This is so even when such operations are conducted by an operator that conducts common carrier rail operations elsewhere, if it operates on the private track exclusively to serve the owner of the track pursuant to a contractual arrangement with that owner. And, of course, the private track can connect to a common carrier line and the national rail network. However, state and local laws and regulations are not Federally preempted with respect to construction of private track.

Thus, a party wishing to construct a rail line can make an election up front as to whether its track will be used to serve the general public (common carriage) or to carry only its own products (private carriage) and therefore choose the regulatory scheme that will apply to the construction of that line.

The Board's Process For Considering New Line Construction Projects

The Board must authorize any new rail line that will be used by rail carriers to provide new common carrier service before the construction of that line may begin. The Board's authorization may take one of two forms: a "certificate of public convenience and necessity" issued under 49 U.S.C. 10901, or an exemption under 49 U.S.C. 10502 that

serves to authorize the construction without all of the formal application procedures. In either event, the rail line can be constructed only after there has been a Board proceeding with the opportunity for public participation, close scrutiny of the proposal by the Board, a full examination of the public interest, and an environmental review.

Under section 10901 the Board is directed to consider whether the proposed project would be "inconsistent with the public convenience and necessity." 49 U.S.C. 10901(c). The Board uses a three-part test to evaluate the public convenience and necessity with respect to a proposal: (1) whether the applicant is financially fit to undertake the construction and provide service; (2) whether there is a public demand or need for the proposed service; and (3) whether the construction project is in the public interest. Opponents of a construction project have the opportunity to offer evidence that a proposed line is not in the public interest.

Safety and environmental concerns are considered and weighed along with the transportation considerations in evaluating the broader public interest, and the Board's detailed environmental review is always a key component of the agency's process and consideration. Typically, the Board is the lead agency in the preparation of an Environmental Impact Statement for a line construction - and affected states, local entities, agencies, communities, and members of the general public participate in that process. After the environmental review is completed, the Board considers the potential environmental impacts in deciding whether to approve the rail construction proposal as submitted, deny the proposal, or approve it with environmental mitigation or other conditions.

In sum, when the Board considers a rail construction proposal, it gives thorough and careful scrutiny to all transportation, environmental, and safety issues, regardless of

whether the process is the formal application process or the petition for exemption process. The statute vests the Board with broad authority to condition its approval of any line construction as necessary to protect the public interest.

Issues that May be Raised by the Department of Energy's Proposal

The core question in determining whether the Board would have to license the construction and operation of a railroad to serve Yucca Mountain would be whether the line would be operated for common carriage, or, instead, used as private track. While the general parameters I discussed earlier are clear, each applicant may make choices as to how to structure the construction and operation of a rail line that can make the Board's analysis quite complex. In practice, this determination is very fact-specific; it might be influenced by who builds the track, who pays for construction and maintenance, who owns the goods being shipped, but the most important determination is whether the line would be held open for service to the general public or reserved exclusively for service to the Department of Energy.

Therefore, if the Department of Energy were to choose rail as its preferred means of transportation, it would then need to decide whether it wanted to structure its proposal to provide for common carriage that does not come within the class of auxiliary track covered by section 10906. If it decided to do so, then such a decision would lead to three basic consequences.

First, the Board would have to license the project before any construction could begin. This means that the Board would first need to find that it had jurisdiction over the project. Then the Board would consider whether the project would be consistent with the public convenience and necessity (if the Department of Energy filed a section 10901

application); or in the public interest (if the Department of Energy filed for an exemption under section 10502). As noted, the public would have a full opportunity to participate in this aspect of the proceeding.

Second, the Board would have to comply with the requirements of the National Environmental Policy Act before issuing final authority to construct and operate the line. This means that the Board would evaluate the environmental impacts of any proposed project. On occasion, the Board has been a cooperating agency in the preparation of environmental impact statements in new rail line construction cases. As long as the analysis takes into account the relevant factors for the Board to consider when it reviews the application, an EIS prepared in that manner would likely be sufficient.

Third, in the event that the Department of Energy structures this proposal to involve common carriage, the Board's licensing authority would be exclusive. Under the preemption provision of 49 U.S.C. 10501(b), any state and local permitting or pre-clearance requirements (including environmental, land use, or zoning requirements) could not be applied to the construction of the proposed rail line, or any rail facilities that are part of that rail line.

If, on the other hand, the Department of Energy chooses to construct this project as private track, the Board would have no jurisdiction, and it could build its track without even notifying the Board. The Department of Energy could ask the Board to issue a declaratory order addressing the status of the track if it wanted Board confirmation of its decision. If the Board agreed that the track would be private, that ruling could be used to dispel doubt as to the nature of the project. Of course, if the Board did not have jurisdiction over the construction and operation of the track, it would not have to conduct

an environmental review pursuant to NEPA. And the statute that expressly preempts state and local government from regulating rail transportation would not apply.

CONCLUSION

In conclusion, it is important to reiterate that the Department of Energy has not yet chosen whether rail will be the primary means of transporting waste to the Yucca Mountain repository. And as my testimony has hopefully explained, whether, and to what extent the federal rail regulatory regime will apply to this rail line cannot be fully known at this time, and depends in large measure on whether the Department of Energy chooses to proceed with rail and then if it does, whether the Department decides to structure the project as common or private carriage.

Of course, how the Board would consider any specific application cannot be answered in advance, but only upon the consideration of the full record. Finally, it is important to note that regulation of the safety of rail transportation once operations begin is under the jurisdiction of the Federal Railroad Administration.

I appreciate the opportunity to discuss these issues with you today, and stand ready to answer any questions you may have.

ATTACHMENT III USE OF DOE'S PROPOSED CALIENTE RAIL LINE

In evaluating the impacts the proposed Caliente rail line, DOE must consider the long term impacts of constructing and operating the proposed railroad along the identified corridor. DOE would use the railroad for a minimum of 24 years, and possibly for 38 years. Additionally, DOE could require use of the railroad for 50 years or more, in the event that wastes must be retrieved from the repository and transported elsewhere.

DOE's final Yucca Mountain EIS states that the proposed rail line would "meet Federal Railroad Administration standards for maintenance, operations, and safety. Current plans for the branch rail line anticipate a train with two 3,000-horsepower, diesel-electric locomotives; from one to five railcars containing spent nuclear fuel and high-level radioactive waste; buffer cars; and escort cars." The EIS further states "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 material for a total of about five trains per week to the repository from about 2010 to 2033." [p. 2-54] Otherwise, the EIS presents little of the information necessary for evaluating the impacts of the proposed railroad development.

One key aspect of rail operations along the Caliente corridor regards train speeds. The EIS states that a one-way trip along the 319-mile route would require about 10 hours, but provides no specific information on train speeds and the implications of train speeds for impact evaluation. However, DOE rail planning references cited in the EIS point out that the long length of the route, coupled with mountainous terrain along 80 miles of the route, will require trains to travel at maximum speeds up to 60 miles per hour in order to comply with the 12-hour crew service limit imposed by the Federal Railroad Administration. In mountainous areas, maximum train speeds would be 15-20 miles per hour upgrade, and 25 miles per hour downgrade. A maximum speed of 60 miles per hour would be needed along other route segments. These higher-speed route segments could include areas of greatest potential conflict with ranching and other non-government land uses, for example in Meadow Valley, Reveille Valley, and the segment between Goldfield and Beatty.

Many important aspects of DOE branch rail operations remain unanswered, including: (1) ownership and operational authority; (2) track, signal, and control system specifications; (3) shared uses of the line; and (4) use of dedicated trains for shipment to Nevada and within Nevada.

As of May, 2004, the DOE Draft EIS and Final EIS, and associated references, remain the primary sources of information on the Yucca Mountain transportation options DOE is considering. The Nevada Agency for Nuclear Projects has documented major deficiencies in these DOE NEPA documents. The State of Nevada has legally challenged the DOE FEIS, and argued that DOE must reassess its transportation options through the NEPA process, before proceeding to implement any major transportation decisions.

Under the Proposed Action, the Department of Energy (DOE) would transport 70,000 metric tons of heavy metal (MTHM) of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) to Yucca Mountain over 24 years (2010-2034). If no second repository is developed, and if Congress authorizes additional capacity, Yucca Mountain could receive the entire projected national inventory of SNF and HLW, about 120,000 MTHM over 38 years (2010-2048). [Pp. S-77 to S-78]

Spent nuclear fuel (SNF) from commercial power reactors would comprise about 90 percent of the wastes shipped to the repository. SNF is an extremely hazardous material. Fission products, especially strontium-90 (half-life 28 years) and cesium-137 (half-life 30 years), would account for most of the radioactivity in SNF during transportation to the repository, and would be the primary sources of exposure during routine transportation operations. Cesium-137 would be the major potential source of irradiation and contamination if a shipping cask were to be breached during a severe transportation accident or successful terrorist attack.

DOE assumes that the average age (cooling time) of SNF shipped to the repository would be about 23 years. [FEIS, p. A-13] DOE calculates that the average rail cask shipped to the repository would contain a total radioactivity of 2.1 million curies, including 816,000 curies of Cesium-137. [FEIS, p. J-33] For accident and sabotage consequence analysis, DOE assumed that the casks would be loaded with SNF aged 14-15 years, [FEIS, p. J-52] which would double the radiological hazard, compared to average SNF. [FEIS, p. 6-46] However, repository shipments could include 5-year cooled SNF in rail casks, resulting in even greater radiological hazards than those evaluated by DOE.

DOE FEIS acknowledges that cumulative routine radiation from shipping casks could pose a health threat to certain transportation workers. NRC regulations allow shipping casks to emit a small amount of radiation during routine operations (10 mrem/hr 2 meters from the cask surface). The dose rate allowed under NRC regulations results in near-cask exposures of about 2.5 mrem per hour at 5 meters (16 feet), in measurable exposures (less than 0.2 mrem per hour) at 30 meters (98 feet), and calculated exposures (less than 0.0002 mrem per hour) at 800 meters (one-half mile) from the cask surface. [FEIS, p. J-38]

Cumulative exposures at these rates can result in adverse health effects for some workers and some members of public. In the most extreme example, motor carrier safety inspectors could receive cumulative doses (200 rem over 24 years) large enough to increase their risk of cancer death by 10 percent or more, and their risk of other serious health effects by 40 percent or more. DOE proposes to control these exposures and risks by severely restricting work hours and doses for certain jobs. [FEIS, Pp. J-44 to J-45]

Studies prepared for the State of Nevada have found that routine transportation of SNF and HLW to Yucca Mountain could result in higher radiation exposures and doses, both to workers and to members of the public, and in more significant adverse health effects, than estimated by DOE. Moreover, the very fact that these exposures would occur has been shown to cause adverse socioeconomic impacts, such as loss of property values,

even though the dose levels are well below the established thresholds for cancer and other health effects.

Public perception of transportation risks could result in massive economic costs in communities along transportation routes. Even without an accident or incident, property values near routes could decline by 3% or more. In the event of an accident, residential property values along shipping routes could decline between 8% and 34 %, depending upon the severity of the accident.

The DOE FEIS acknowledges that a very severe rail accident or a successful terrorist could release radioactive materials from a shipping cask, resulting in radiation exposures to members of the public and latent cancer fatalities (LCFs) among the exposed population. Clean-up costs following a worst-case transportation accident could reach \$10 billion. [FEIS, Pp. 6-45 to 6-52, J-72 to J-74] While the DOE did not specifically estimate cleanup costs after such an attack, cleanup requirements would likely be similar to a worst-case transportation accident. Studies prepared for the State conclude that DOE has significantly underestimated the human health impacts of very severe transportation accidents and terrorist attacks, and that cleanup costs could exceed \$10 billion.

In the FEIS, DOE made no final decisions about transportation options nationally. Decisions about "how spent nuclear fuel and high-level radioactive waste would be shipped to the repository (for example, truck or rail) and how spent nuclear fuel would be packaged (uncanistered or in disposable or dual-purpose canisters) would be part of future transportation planning efforts." [FEIS, p. 2-5] For shipments nationally, "DOE would use both legal-weight truck and rail transportation, and would determine the number of shipments by either mode as part of future transportation planning efforts." [FEIS, p. 2-13]

DOE developed two national transportation scenarios - "mostly legal-weight truck" and "mostly rail" - in order to estimate the number of shipments required under the Proposed Action (24 years) and if all projected high-level nuclear waste is shipped to Yucca Mountain (38 years).

DOE adopted this approach "because, more than 10 years before the projected start of operations at the repository, it cannot accurately predict the actual mix of rail and truck transportation that would occur from the 77 sites to the repository." [FEIS, p. J-10] The following table summarizes the number of shipments estimated by DOE for each scenario.

DOE Estimated Number of Shipments for Transportation Scenario Combinations

Inventory Scenario	(Mostly Truck) Truck Shipments	(Mostly Truck) Rail Shipments	(Mostly Rail) Truck Shipments	(Mostly Rail) Rail Shipments	LWT Casks Shipped by Rail
Proposed Action	52,786	300	1,079	9,646	Approx. 53,000

(2010-2034)					
Module 1 (2010-2048)	105,685	300	3,122	18,243	Approx. 106,000
Module 2 (2010-2048)	108,544	355	3,122	18,935	Approx. 109,000

Source: DOE/EIS-0250, Table J-11 (amended to show the LWT casks on rail scenario)

The DOE "mostly rail" national scenario would result in 9,646 large rail cask-shipments to Nevada over 24 years, and 18,935 rail cask-shipments to Nevada over 38 years. Recently, DOE has conducted a supplemental analysis that determined it would be feasible to transport smaller, legal weight truck cask on rail cars, either directly to Yucca Mountain via the proposed rail spur or to an intermodal facility for off-loading onto trucks. Such a scenario would required between 53,000 and 109,000 casks to be moved by train. If a rail spur to Yucca Mountain is not constructed, an equal number of legal weight truck shipments would be needed to move the waste from an intermodal facility to the repository.

ATTACHMENT IV
COMMENTS OF THE NEVADA HIGHWAY PATROL ON
DOE'S DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR
THE YUCCA MOUNTAIN REPOSITORY SITE
November 1999

Nevada Highway Patrol

Division

Department of Motor Vehicles and Public Safety

Comments on

U. S. Department of Energy's

Draft Environmental Impact Statement

YUCCA MOUNTAIN REPOSITORY

**DIVISION COMMENTS ON THE
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

A REPORT SUBMITTED TO:

THE NEVADA AGENCY FOR NUCLEAR PROJECTS

BY

THE NEVADA HIGHWAY PATROL
CARSON CITY, NEVADA

NOVEMBER 1999

I Preface

Unlike most states who are both originators of and transportation corridors for prospective shipments of spent nuclear fuel (SNF) and High-level Radioactive Waste (HLW), Nevada is a transportation corridor and the intended permanent disposal site for the Nation's Spent Nuclear Fuel and High-level Radioactive Waste.

As the intended permanent disposal site, Nevada is the end of the funnel for the national shipping campaign where rail and truck shipments from 77 sites across the nation would converge. While the Department of Energy (DOE) has not chosen a preferred mode, corridor or route, their Draft Environmental Impact Statement identifies three transportation choice scenarios. DOE will not choose their preferred mode, corridor or route until a decision to build a repository at Yucca Mountain is final.

During the past several years the highway patrol has been involved in preplanning activities, most recently was the study Base Case Scenario - High Level Transportation (Mushkatel, A.H.⁴). This report identified activities the highway patrol would most likely be involved in or which would otherwise affect its normal operations. These areas included, but are not limited to, routing, drivers/carrier's compliance and vehicle inspections, bad weather and road conditions, safe parking, advance notice and tracking shipments, communication systems, mutual aid agreements, first responder/emergency management, equipment, escorts, and ports of entry.

To adequately address these issues, provide appropriate levels of service, funding, and other operational issues a separate section, inside the Southern Command, needs to be created. This section would continue as long as the DOE's transportation campaign continues or approximately 24 years.

.....⁴ See Appendix A for text of updated report and costs

II Summary

Should Yucca Mountain be chosen as the nation's permanent disposal site for the nation's nuclear waste, the most immediate effects on the highway patrol will be the training, inspection, escorting and traffic related events associated with the trucks transporting the waste through the state. With transportation beginning as early as 2004, or as late as 2015, transportation issues need to be identified, resolved, and implemented on an expedited basis.

Transportation of spent nuclear fuel and other high-level wastes⁵ would be shipped from approximately 77 sites⁶ to the Yucca Mountain repository over an estimated 24 year period. The Department of Energy estimates more than 70,000 metric tons of radioactive material will be transported across the nation and then in Nevada by legal-weight trucks, rail and heavy-haul trucks, during the transportation phase of their operation.

“DOE's preferred alternative is to proceed with the Proposed Action to construct, operate, and monitor, and eventually close a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain. The analyses in this EIS did not identify any potential environmental impacts that would be a basis for not proceeding with the Proposed Action. DOE has not chosen any mode, corridor, or route as preferred at this time. However, DOE has designated the Caliente-Chalk Mountain rail corridor and heavy-haul route as ‘nonpreferred’ alternative.”

While DOE does not select a national or Nevada preferred mode, corridor or route, their Draft Environmental Impact Statement (EIS) identifies three transportation choice scenarios⁷. Considering the factors involved in both the national transportation and Nevada transportation scenarios it would be prudent to presume that legal-weight truck shipments would be transporting their radioactive loads using the Department of Transportation (DOT) routing guides contained in 49 CFR 397.101; unless the state designates alternate routes as specified in 49 CFR 397.103⁸ which as of this analysis has not been done. Legal-weight trucks

.....⁵Spent nuclear fuel (SNF) from DOE licensed U.S. reactors; high-level wastes (HLW) from the nation's defense complex, including naval propulsion fuel; and other wastes requiring geologic disposal.

⁶..... See Figure S-1, Draft EIS Summary, page S-5

.....⁷Approximately 4 years before shipments to the proposed repository begin, the Office of Civilian Radioactive Waste Management (OCRWM) plans to identify the preliminary routes that DOE anticipates using in state and tribal jurisdictions. See Volume II Appendixes A through L, section J.1.2.2 Transportation Routes for full text.

.....⁸See call out “State-Designated Preferred Routes” on page J-27 in Volume II Appendixes A through L of the draft EIS.

using existing highways would require a fully functional, 24-hour operational, ports of entry⁹, at each location where radioactive waste will enter Nevada, for vehicle inspection and related activities. Rail shipments would use an intermodal transfer station where the radioactive shipments would be loaded onto heavy-haul trucks, then use existing highways, including the proposed Las Vegas beltway, to transport the rail casks to Yucca Mountain¹⁰.

We evaluated each of the candidate rail corridors, potential locations for an intermodal transfer station and heavy-haul truck routes. This evaluation suggests that two locations, Caliente and Apex/Dry Lake, would provide DOE the most operational advantages for this type of operation. However, our analysis concluded that it is unlikely DOE would construct a branch rail line due to preconstruction engineering studies, land acquisition, the estimated construction time of 2.5 years and total cost of approximately 29 billion (1988 dollars) for construction.

The Draft EIS goes into great length evaluating risks involved while transporting the waste. However, the emergency response to an incident or accident is generally extenuated. However “DOE would, as requested, assist state, tribal, and local governments in several ways to reduce the consequences of accidents related to the transportation of spent nuclear fuel and high-level radioactive waste.” This assistance consists of technical assistance and funding to train state, local, and tribal public safety officials in relation to such transportation.¹¹

The equipment required to respond to an accident or incident goes well beyond training and technical assistance. Equipment first responders¹² would need include detection/monitoring devices, binoculars, and personal protective suits, to identify some minimum levels and perhaps other protective equipment yet to be identified.

Impacts from accidents and successful acts of sabotage were comparable according to a study done by Sandia National Laboratories¹³. While the estimated impacts would be greater for an act of sabotage against a legal-weight truck shipment than against a rail shipment, no mention of acts of sabotage against a

.....⁹ DOE estimates 50,000 shipments would be transported; see 2.1.3.2.2.

.....¹⁰ Volume I Impact Analyses 3.2.1.1 Highway Transportation, 2nd paragraph “Final transportation mode and routing decisions will be made on a site-specific basis during the transportation planning process, following a decision to build a repository at Yucca Mountain.”

.....¹¹ Volume I Impact analyses 6.2.4.2 Transportation Emergencies, page 6-30

.....¹² Highway patrol officers escorting shipments or responding to accidents or incidents would be first responders.

.....¹³ Volume I-Impact Analysis 6.2.4.2.3 Impacts of Acts of Sabotage

heavy-haul truck transporting a rail cask is discussed.

A vehicle the size of a heavy-haul truck (220 feet long weighing and 300,000 pounds) traveling at 12 to 18 MPH will create an excessive amount of traffic congestion, which will increase the likelihood of accidents, highway closures and blockage, and ultimately increase the time for transportation of the shipments.

Health exposure risks and issues related to vehicle inspectors, other workers at the inspection facilities and troopers performing escort duties are left to the State Health Department as there are no qualified personnel in the division to comment on these issues.

Until the Department of Energy identifies its preferred transportation mode, corridor and route there are few specific comments we can make. Therefore, most comments will be general in nature and may have to be revised after DOE's decision.

III Specific Comments

Section 1

Additional Nevada Transportation Analyses

(Section 1.5.1.2)

This section confirms DOE’s designation of the Caliente-Chalk Mountain branch rail line and heavy-haul truck route as non preferred based upon the U.S. Air Force opposition on national security concerns.

This route is perhaps the optimum route for a branch rail line or heavy-haul truck route as it is almost exclusively on federally owned land. Public and private discussions on the validity of the Air Force claim of national security concerns should have been a part of DOE’s public meetings. Just the mention of “national security concerns” should not have eliminated this possible route. There are many appropriate state employees who could qualify for the necessary security clearances to review the Air Force assertion of “national security concerns.”

Nevada Transportation (Sections 2.1.1.4, 2.1.3, 2.1.3.3, 2.3.3, 2.4.4.2, 2.5, 2.5.1, 2.6, 3.2.2, 4.1.13.4)

Since “final transportation mode and routing decisions will be made on a site-specific basis during the transportation planning process, following a decision to build a repository at Yucca mountain,” DOE is looking at three transportation scenarios for Nevada. The scenarios include legal-weight trucks, rail, and heavy haul-trucks. Since there is no existing rail line to Yucca Mountain¹⁴ DOE would have to construct a branch rail line from an existing mainline to the site or transfer the rail cask to a heavy-haul truck at an intermodal transfer station for transport to the repository.

The Nevada transportation scenarios include legal-weight truck, rail and heavy-haul trucks, which includes construction of an intermodal transfer station with associated highway improvements. DOE has identified five potential rail corridors and three potential intermodal station locations with five potential highway routes for heavy-haul trucks.

Shipment security and escorts are covered in 10 CFR Part 73.26. This section allows the licensee, or his agent, to establish a security organization which would provide escort and security for each shipment. Under this scenario the Highway patrol would have no role in escorting these shipments. However, it is the Highway patrol’s position that in addition to any other security or escort measures provided by the licensee, or his agent, that highway patrol troopers escort each of these shipments and vehicles while traveling on Nevada highways.

TRANSCOM tracking activities would be an integral part of the escort function

.....¹⁴ See 3.2.1.1 Highway Transportation, page 3-98

and this equipment needs to be placed, at a minimum, in the division's communications center in Las Vegas, and perhaps in another facility to be decided upon by state officials in Carson City (D.E.M. or Governor's office of Nuclear Projects). Training also must be provided to employees on use, repair, and coordination with any central communications center or other appropriate agency or facility.

Other specific concerns center on the areas of:

- vehicle inspection (legal-weight trucks and heavy-haul trucks)
- equipment (initial purchase-maintenance and replacement)
- ports of entry and vehicle inspection facilities at intermodal transfer stations
- training (initial first responder, advanced training and ongoing training)
- accidents and incidents
- emergency response equipment and training
- private/government agency emergency response personnel
- safe havens
- designated and alternative routes
- en route repair facilities, towing of vehicle, and availability of parts to repair trucks
- security of shipping cask during en route repair of heavy-haul truck
- possible acts of sabotage
- health exposure issues to personnel

While the Draft EIS evaluates each of the transportation scenarios separately the highway patrol's concerns would be identical for each of the scenarios. Specific sections of the Draft EIS will be referenced when necessary.

Legal-Weight truck shipping Scenario

(Sections 2.1.3.2.2 and 2.1.3.3.1)

Under the mostly legal-weight truck shipping scenario about 50,000 shipments would be transported during a 24 year period¹⁵, which equates to approximately six (6) plus shipments per day, 365 days per year.. Legal-weight truck shipments¹⁶ would use the Interstate highway system, including beltways and bypasses unless alternative routes are designated by Nevada Department of Transportation (NDOT). Legal-weight truck shipments, in Nevada, would travel directly to Yucca Mountain using Interstate 15 and the proposed beltway around the urban core of Las Vegas¹⁷.

.....¹⁵See Table 2-3, page 2-47, Volume-I Impact Statement

.....¹⁶See call out Implementing Alternatives and Scenarios, page 6-5 Volume I-
Impact Analyses regarding permitted overweight, overdimension truck transportation

.....¹⁷ See figure 2-28, page, 2-45Volume I-Impact Statement

After traveling thousands of miles and varied terrains legal-weight trucks would enter Nevada on I-15 from the north or south, bypass the Las Vegas area, on the proposed beltway, and travel north on U.S. 95 to the Nevada Test Site and then to the Yucca Mountain site.

Prior to transporting through the metropolitan area safety compliance of vehicles, loads, and drivers must be insured. Legal-Weight trucks would need to be at a port of entry¹⁸ facility where vehicle and driver compliance with state and federal laws and regulations would be performed, shipping papers reviewed, and escorts would be assigned to accompany trucks. To capture commercial vehicles entering the state on I-15. Ports of entry need to be constructed at or near Mesquite and Jean/Sloan.

Costs to build ports of entry include land acquisition, construction, equipment and training, personnel, utilities, and other on-going or related expenses. Details of these costs are contained in the study Base Case Scenario-High Level Transportation (costs are in 1995 dollars). Other activities could also be conducted at the port of entry. These activities could include vehicle inspection of all commercial motor vehicles entering the state, issuing NDOT oversize permits, and other related permit activities.

The ports of entry should have one inspection bay and pit that is segregated and protected from the other bays to provide the maximum protection, during an inspection of vehicles transporting radioactive shipments, to employees and others using the facility.

Heavy-Haul Trucks

(Sections 2.1.3.3.3, 2.1.3.3.3.1, 2.1.3.3.3.2, 2.3.3.2, 3.2.2.2, 3.2.2.2.1, 3.2.2.2.3.1, 3.2.2.2.3.2, 3.2.2.2.11)

With rail service not currently available and the enormous obstacles involved in constructing a branch rail line, heavy-haul truck shipments must be viewed as the likely scenario for rail shipments arriving in the state. These vehicles, traveling on existing roads, presents the highway patrol with an enormous concern.

Training for inspectors to properly inspect these unique vehicles must be scheduled and performed in a timely manner to insure the safety of all concerned. Next is establishing a vehicle inspection area at the intermodal transfer station with the appropriate equipment, manpower, and environmentally safe employee working areas.

Escorts for these very long and heavy vehicles will not only provide the usual escort responsibilities but also will include responsibilities to control and clear large expanses of roadway and conducting preventative sweeps ahead of the load,

.....¹⁸ Should NDOT designate alternative routes port of entry location would need to be reviewed

keeping other traffic moving in an orderly fashion, and interacting with security teams.

Impacts from non-fatal (injury/property) is not addressed in the Draft EIS. However it is likely that most accidents involving heavy-haul truck (and legal-weight truck) shipments would be injury or property, rather than fatal only.¹⁹ This will have a substantially larger impact than the draft EIS is portraying, especially with traffic congestion, reduced travel lane expectancy and the necessity to reroute traffic due to highway blockage²⁰.

The projected speed of 20 to 30 miles per hour for these vehicles is highly optimistic especially during peak or congested traffic periods and a more realistic speed would probably be 12 to 18 miles per hour, which will undoubtedly increase congestion in traffic.

Nevada Routes

An imminent concern is DOE's anticipated use of the Las Vegas Beltway and their assumption that the area around it will remain a rural area. It is the highway patrol's position that the land area up to five miles from the proposed Las Vegas beltway is becoming a urban area at this time. This is supported by the population projections, from the Clark County Department of Comprehensive Planning²¹, which shows a population of more than 1.2 million, nearly 602,000 housing units and employing almost 700,000. These numbers are not indicative of a rural setting. While Section 3.2.2 addresses the percentage (0.5%) of commercial traffic on US 95 the study does not estimate using the Las Vegas beltway which most likely will increase dramatically when complete.

Impacts of acts of Sabotage

The analysis in the draft EIS only considers impacts of "successful" sabotage attempts on a cask (truck or rail). This does not address any issues directly relating to Nevada transportation security and safety issues and the basic concept of risk analysis is not introduced in the study. Chances for an incident are increased when these shipments arrive in Nevada and travel a standard route to the repository. This is indicative to that which Nevada has experiences in the past with protests staged at the entrance to the Nevada Test site. While "successful" attempts may not breach the integrity of these shipments the highway patrol strongly feel that the impact to highway users and the community is extremely under estimated as this was not addressed in the EIS.

.....¹⁹Section 6.2.4.2.1

.....²⁰ See Appendix B for Involvement in fatal and injury crashes and involvement rates for large trucks.

.....²¹See Appendix C for projections.

While the exposure impact may be minimal during an incident, even if the cask is not breached, the greater Las Vegas Metropolitan area response, mitigation and tourism impact would be substantial.

Human Error

Not addressed in DOE's Draft Environmental Impact Statement is human error in the handling and transportation of radioactive materials. While most of the radioactive materials transportation accidents that have occurred have been relatively minor in nature they are generally attributable to human error. Most human mistakes are usually caused by error-likely situations. These error-likely situations typically stem from weaknesses in the policies/practices that influence how we select, train, supervise, communicate with, and design the workplace and systems for workers.

For the transportation of radioactive materials the human factors, including specialized driver training, experience, qualifications and fatigue, are those that are in need of special attention. Fatigue and experience factors, for example, are not readily measurable at inspection stations, and yet, they are important safety considerations²².

Miscellaneous Issues not addressed

Any response to an incident, accident, even a simple vehicle breakdown, will impact a large group of responders. The EIS does not discuss facilities, equipment and mitigation. It only refers to the transporters responsibilities regarding these issues, not the impact on public safety (response) agencies. Some of the issues are:

- Vehicle breakdown (for any usual reason). Due to size and weight (heavy-haul), or load shifting any shipment, how will repairs (or load transfer) be dealt with?
- Response times to breakdowns and incidents are not addressed. Timely responses would require a separate study to determine locations for staged equipment and personnel and the associated infrastructure to accommodate them.

.....²² See the report Public Safety Advisory Group Report On The Proposed yucca Mountain Repository, J

Appendix A

Appendix A

BASE CASE SCENARIO - HIGH LEVEL TRANSPORTATION

Emergency Response Vans

The number of emergency response vans may be affected by the routes chosen. It therefore would be premature to specify how many and at what intervals the response vans should be placed. Ideally, they should be located so as to have a maximum response time of one hour. The alternative to this would be to assign one response van to each Port of Entry.

Based upon a minimum of two (2) Port of entries design for inspection of nuclear shipments, two (2) emergency response vans with crews, would be required. An additional nine (9) emergency response personnel would be required to staff the Port of Entry and still maintain sufficient personnel for routine inspection should the response van be called out. The cost projection for an equipped emergency van was estimated to be \$350,000. The cost for two (2) (one for each Port of Entry) would be approximately \$700,000. Again, the two Ports of Entries would be a minimum. Replacement vehicles would be based upon State requirements of mileage.

Response to area's on railroad routes would require specialized equipment such as military type (Hummer, etc.) Vehicle or helicopter. Costs of these are not reported here within as this would most probably be the responsibility of another agency other than the highway patrol.

Safe Escorts

Safe escorts should be required should high-level shipments commence through Nevada. A minimum of 2 two-man units would be required per shipment. During the first year it is estimated that there will be seven (7) legal weight shipments per day. This would require 8, two-man teams to escort two shipments per day under ideal conditions. This equates to the following costs using new positions rather than existing positions.

Personnel Initial Cost

32 Troopers

Hire, Train, Equipment =	\$ 94,000
Escort Vehicle - Commercial type =	\$ 32,400
Total	\$ 126,400
	<u>x 32 troopers</u>
	\$4,044,800 Initial

Personnel Annual Costs

32 Troopers	\$1,429,600
Benefits	<u>\$ 590,304</u>
Total	\$2,019,904

Training

Until such time that specific needs for training are determined which can not be done until routes and the commitment level is established, only a rough projection can be given regarding needed training.

Based upon a 40 hour course conducted in conjunction with the Fire Marshall' Office and given at the P.O.S.T. academy as a money-saving factor, the following is projected. The dorm at P.O.S.T. is reserved to house 22 NHP personnel. The need to train 274 troopers which do not line in Carson City (location of the dorm) would be required. With an estimated \$2,000 per week overhead cost. Approximately 25 to 28 weeks of overhead would be required. Supervisors from the rank of Sergeant and above (approximately 64) would need an additional week of command/advanced training. As taken from the 1988 report from Dr. Mushkatel of State Costs, training would need to include Port of Entry and Escort Troopers 60 to 120 troopers).

The training for all troopers, the necessary Supervisors, Port of Entry personnel and Escort personnel would require the total P.O.S.T. overhead to fall between 25 weeks minimum to an approximate maximum of 28 weeks. The monetary amounts for overhead would be a minimum of \$45,000.00 with an estimated maximum of \$60,000. State per diem should be added to the above figure based upon \$26.00 per day. Per diem costs figure to be at a low of \$35,070.00 and an approximate high of \$41,370.00. Per diem for supervisors is estimated at \$4,550.00 bringing the totals to a low of \$39,620.00 and a high of \$45,920.00.

Loss of time from regular duties due to training requirements should be accounted for as follows:

					Trainin g
					<u>Training Time</u>
3 -	Majors -	\$7,734.58 x 3=	\$23,203.75	per month	or 11,601.88 / 80 hrs
1.5	Captains-	\$7,085.83 x 5=.	\$35,429.17	per month	or . 17,714.58 /... 80 hrs
15-	Lieutenants-	\$6,498.92 x 15 =	\$97,483.75	per month	or . 48,741.88 /... 80 hrs
44-	Sergeants-	\$5,717.83 x 44 =	\$251,584.67	per month	or 125,792.33 /.. 80 hrs
207-	Troopers	\$5,260.17 x 207=	\$1,496,555.83	per month	or . 5,986,223.32 / 40 hrs

Estimates for port of Entry personnel and Escort personnel would range from a minimum of \$468,646 to an estimate high of \$973,292.

For ease of figuring, reimbursement for loss of regular duties, due to required training, would for one month's time be at a minimum of \$3,158,674.00 and estimated maximum of \$3,695,649.00.

ATTACHMENT A

Projected Construction Costs for Ports of Entry

To assist with determining construction costs with establishing a "Port of Entry", contact was made with Russ Hall of the Nevada Department of Transportation and David K. Nakao, P.E. of the State of California's Department of Transportation, Office of Permits and Truck Studies.

The state of California has currently developed a plan for the construction of a 4 bay facility on I-15 near the Nevada/California border with construction beginning in the year 2001.

Site location is important with respect to construction costs. Generally, straight and flat terrain is the most economical. Consideration is given to the terrain as approximately 75% of construction costs are attributed to paving and lighting. Approximately 1 mile of deceleration and acceleration lanes are required to enter and leave the site. Nevada, with raised speed limits, may be required to lengthen the deceleration/acceleration lanes.

The following information is supplied by California for construction costs of actual and projected sites:

1-15 @ Mountain Pass = \$17,880,000
I-40 near Needles = 19,200,000
I-5 So. Of Redding = \$12,840,000

Construction costs per monitoring station based upon the State of California's average cost for constructing Port of Entry's would be \$16,560,000.00. The cost for two would be \$33,120,000.00. This estimate is based upon providing:

Signs, lighted at night, on the roadway directing all trucks transporting high-level radioactive waste to exit.

Paved heavy-duty freeway two-lane ramps leading into and out of the weight-in-motion scales.

Computer-assisted weigh scales that allow individual axle weights and gross vehicle weights to be recorded and the vehicle to be classified while the truck continues to move.

Over-dimensional detectors.

A building that includes office space, reception area, restrooms, showers, locker room, Hazardous Material locker room for self-contained Haz Mat examining protective suits, break room, computer and electronic reader area,

A signal system that, when necessary, directs the trucks and drivers to an inspection area or into the facility.

An all weather vehicle inspection facility complete with high intensity lights, automatic bay doors, fire suppression equipment, Haz Mat detection and monitoring equipment, generator.

A high-level radioactive materials containment area for leaking of ruptured containers and a decontamination area for personnel.

A paved parking and vehicle impoundment area, equipped to transfer data to NHP stations, other state, local and federal law enforcement and public safety agencies and other haz mat responder teams.

Each monitoring station would be operated 24 hours a day, 7 days a week. This would require 15 commercial troopers, one sergeant and one lieutenant.

PERSONNEL ANNUAL COSTS:

60 Troopers	\$2,680,500
Benefits		\$1,106,820
4 Sergeants		\$ 195,484

Benefits	\$ 78,972
4 Lieutenants	\$ 224,120
Benefits	\$ 87,828
12 Clerical	\$ 351,300
Benefits	\$ 8,495
2 Dispatchers	\$ 75,420
Benefits	\$ 18,452
TOTAL PERSONNEL EXPENSES	\$4,827,391
Overtime would be estimated at 5% of total personnel costs,	\$ 241,370
TOTAL PERSONNEL COSTS INCLUDING OVERTIME	\$5,068,761
OPERATING COSTS: ANNUAL	
Vehicle operating costs 68 vehicles	\$ 121,176
Utilities	\$ 144,000
Supplies	\$ 192,000
Maintenance	\$ 96,000
Contracts	\$ 72,000
Personnel driven operating costs	\$ 675,451
TOTAL OPERATING COSTS	\$1,300,627
EQUIPMENT:	
Furniture	\$ 240,000
High-level radioactive monitoring equipment and personal protective attire	\$ 600,000
68 vehicles	\$1,713,600
Computers	\$ 166,900
68 new positions, equipment	\$1,070,214

TOTAL EQUIPMENT COSTS \$3,790,714

Sworn officers assigned this duty will, over and above the normal training cost, receive specialized training in the detection and containment of Radioactive Waste.

TRAINING:

68 sworn \$2,093,203

Specialized training \$ 300,000

TOTAL TRAINING COSTS \$2,393,203

TOTAL MONITORING STATION COSTS FIRST YEAR \$43,280,120

SECOND YEAR COSTS would not include construction costs or new equipment costs or initial training costs associated with academy training and Radioactive specialized training.

TOTAL SECOND YEAR COSTS \$ 6,369,387

RAILROAD INSPECTION OF THE TRANSPORTATION OF HIGH-LEVEL RADIOACTIVE WASTE

These inspections of high-level radioactive waste transported vial railway could be conducted by monitoring station personnel. Specialized training would be provided by the Federal Railroad Administration. Inspection areas are restricted to the following:

- Tracks
- Haz Mat
- MP & E Inspector
- Operating Procedures
- Signal and train control

This Division has no information to base a cost statement.

To monitor the transportation of high-level radioactive waste, it would be recommended that as permit restriction, the commercial carriers of this cargo be required to have a Global Positioning System transmitter on the vehicle. This would allow for the continuous monitoring of the vehicle as it travels to its destination. Included here are the costs to the state of this program. For detailed information on equipment and quantity, see the attached memorandum, subject GPS.

TOTAL COST OF THE GPS MONITORING SYSTEM	\$ 195,984
FIRST YEAR COSTS	\$66,683,826
SECOND YEAR COSTS	\$ 7,024,188

Question: Could less expensive mobile units be constructed for Ports of Entry?

We currently deploy mobile inspection stations statewide on a random basis for the purposes of conducting safety inspections and weighing activities. These are designed for short term use for the following reasons:

- 1... Inadequate lighting at the facilities, as well as around the inspection station.
- 2... There are no facilities or running water at these sites.
- 3... There is no emergency decontamination facilities to handle exposure to hazardous materials.
- 4... There is no shelter to conduct inspection activities during inclement weather.
- 5... The inbound and outbound access ramps are not designed for continuous operation.
- 6... The current sites are not large enough to handle high volume traffic 24 hours per day, 7 days per week
- 7... The current sites are not large enough to place more than two or three vehicles out of service at any given time.
- 8... There are no buildings to operations. We currently use a converted recreational vehicle that could not handle the rigors of continuous 24-hour use and cannot hold more than about five (5) people.

Appendix B

Appendix B

The following chart was published in the newsletter NHTSA, published by the U.S. Department of Transportation, National Highway Traffic Safety Administration. (DOT808 952)

Involvement in Fatal and Injury Crashes and involvement rates for large trucks, 1998-1998

Year	Number of large trucks involved in fatal crashes	Number of large trucks registered	Vehicle involvement rate*	Vehicle miles traveled (millions)	Vehicle involvement rate **
1988	5,241	6,136,884	85.4	137,985	3.8
1989	4,984	6,226,482	80.0	142,749	3.5
1990	4,776	6,195,876	77.1	146,242	3.3
1991	4,347	6,172,146	70.4	149,543	2.9
1992	4,035	6,045,205	66.7	153,384	2.6
1993	4,328	6,088,155	71.1	159,888	2.7
1994	4,644	6,587,885	70.5	170,216	2.7
1995	4,472	6,719,421	66.6	178,156	2.5
1996	4,755	7,012,615	67.8	182,971	2.6
1997	4,917	7,083,326	69.4	191,345	2.6
1998	4,935	-----	-----	-----	
Year	Number of large trucks involved in injury crashes	Number of large trucks registered	Vehicle involvement Rate*	Vehicle miles traveled (millions)	Vehicle involvement rate**
1988	96,000	6,136,884	1,562	137,985	69
1989	110,000	6,226,482	1,770	142,749	77
1990	107,000	6,195,876	1,730	146,242	73
1991	78,000	6,172,146	1,264	149,543	52
1992	95,000	6,045,205	1,567	153,384	62
1993	97,000	6,088,155	1,585	159,888	60
1994	96,000	6,587,885	1,452	170,216	56
1995	84,000	6,719,421	1,244	178,156	47
1996	94,000	7,012,615	1,339	182,971	51
1997	96,000	7,083,326	1,349	191,345	50
1998	89,000	-----	-----	-----	-----

* Rate per 100,000 registered vehicles.

** Rate per 100 million vehicles miles traveled.

----- = not available

Source: Vehicle miles traveled and registered vehicles - Federal Highway Administration.

ATTACHMENT V
LAWSUIT CHARGING SAFETY VIOLATION AND OTHER PROBLEMS
WITH OPERATIONS OF THE BURLINGTON NORTHERN
AND SANTA FE RAILROAD

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF IOWA
WESTERN DIVISION**

Randall Anderson, Thomas Bauer,)	
Perry Bochmann, William Dahna,)	
Steven Derry, Brent Hildahl,)	
Robert Hogeboom, Kenneth Johnson,)	
Charles Leonard, J.B. Linneman,)	
James P. Manna, Reginald Nelson,)	
David Ohlrich, Anthony Pierce,)	
Cameron Polly, James Prevail,)	
David Ransford, James Sandman,)	
John Turner, Craig Walsh, John Doe(s),)	
United Transportation Union, Local 418,)	
Burlington System Division of the)	
Brotherhood of Maintenance of Way)	
Employes, and the Burlington Northern)	
System Federation of the Brotherhood)	
of Maintenance of Way Employes,))	
Plaintiffs,)	
)	
v.)	
)	
Burlington Northern and Santa Fe)	FIRST AMENDED
Railway Company, a Delaware Corp.,)	COMPLAINT
Defendant.)	

NATURE OF CASE

1. This action against Burlington Northern Santa Fe (“BNSF”) seeks declaratory judgment, damages, and injunction to remedy BNSF’s victimization of Plaintiffs for demanding compliance with governmental and industry safety requirements, and to protect the public, state and local governments, and BNSF shareholders from the consequences of the enhanced probability of accidents involving nuclear and hazardous waste resulting from noncompliance with safety requirements.

JURISDICTION

2. Jurisdiction over the parties and subject matter is predicated upon 28 U.S.C. §1331, (federal question), 28 U.S.C. §2201 (declaratory judgment), and the pendant state claims. The amount in controversy exceeds \$75,000.

VENUE

3. Within the District of Northern Iowa Western Division, BNSF operates a rail line, maintains an office and employs managers , committed many of the acts and omissions forming the gravamen of the Complaint, and is where most of the Plaintiffs live and usually work.

PARTIES

Individual Plaintiffs:

4. Each individual plaintiff, John Doe(s), and shareholder plaintiff shares in common with the others (these facts are incorporated by reference into the Paragraphs 5 – 26 that they:
- a. are members of the United Transportation Union “(UTU”);
 - b. reside in or near Sioux City, Iowa;
 - c. are Iowa citizens and taxpayers, unless otherwise designated;
 - d. are employed by BNSF as a train service employees in Iowa, unless otherwise designated;
 - e. are being now and will be in the future personally damaged by these actions and omissions of the BNSF;
 - f. as a direct result of the conduct of the BNSF, are legitimately fearful:
 1. of losing their jobs;
 2. of being subject to loss of their federal job qualifications;
 3. of being injured at work;
 4. of being physically and emotionally damaged by the turmoil and pressure in the workplace because of the situation;

5. and worried that a haz-mat loss will jeopardize themselves, their families, and community.

5. Randall Anderson, is a train engineer residing in Sioux City, Iowa.
6. Thomas Bauer is a train service employee residing in or near Sioux City, Iowa.
7. Perry Bochmann, is a train service employee residing in Sioux City, Iowa.
8. William Dahna is a train service employee residing in Sioux City, Iowa.
9. Steven Derry is a a trainman residing in South Sioux City, Iowa.
10. Brent Hildahl, is a utility operating (switchman-trainman) residing in Sioux City, Iowa.
11. Robert Hogeboom is a train service employee residing in Sioux City, Iowa.
12. Kenneth Johnson is a train service employee residing in or near Sioux City, Iowa.
13. Charles Leonard is employed as a train service employee residing in or near Sioux City, Iowa.
14. James Linneman, a conductor with over 25 years experience, is a resident of Lincoln, Nebraska.. Linneman was fired in 2001 specifically because he complied with Federal requirements as to testing train air brake systems and removing defective cars prior to departure. Linneman originally filed an action under Nebraska law, which BNSF removed to federal court in Nebraska. While that case was in preliminary stages, Linneman filed a stipulated dismissed under the Nebraska law, without prejudice to any rights he had under any other laws. Linneman then joined this much larger, related action.
15. James P. Manna is a train service employee residing in or near Sioux City, Iowa.
16. Reginald Nelson is a train service employee in Iowa but resides in South Dakota.
17. David Ohlrich is a train service employee residing in Sioux City, Iowa.
18. Anthony Pierce is a train service employee residing in or near Sioux City, Iowa.
18. Camear Polly is a train service employee residing in Sioux City Iowa.
19. James Prevail,, resides in or near Sioux City, Iowa, is an Iowa citizen, and is as a train service employee in Iowa.
20. James Sandman is a train service employee residing in or near Sioux City, Iowa.
21. Craig Walsh is a train service employee residing in or near Sioux City, Iowa.

22. John Doe(s), are approximately 120 similarly situated train service employees working under authority of the Sioux City Terminal Managers, at least 90 are Iowa residents, most live within 100 miles of Sioux City, Iowa.

Labor Organizations Plaintiffs:

23. United Transportation Union Local 418 represents many of the Plaintiff's and is labor organization as defined in 45 U.S.C. §151, *et.seq.* As a result of the conduct of the BNSF, its members are fearful of losing their jobs, of being subject to loss of federal job qualifications, of being injured at work, of being physically and emotionally damaged by the turmoil and pressure in the workplace because of the situation, and worried that a haz-mat loss will jeopardize them, their families, and community.

24. The Burlington System Division of the Brotherhood of Maintenance of Way Employes and the Burlington Northern System Federation of the Brotherhood of Maintenance of Way Employes, are two different system divisions of unions of railroad employees (collectively "BMWE"), organized pursuant to 45 U.S.C. §151, *et.seq.* They have standing for thousands of employees of the BNSF, including those in the BNSF's Iowa workforce. As a direct result of the conduct of the BNSF, its members are fearful of losing their jobs, of being subject to loss of federal job qualifications, of being injured at work, being physically and emotionally damaged by the turmoil and pressure in the workplace because of the situation, and worried that a haz-mat loss will jeopardize them, their families, and community. The BMWE Division are plaintiffs in the First, Third, and Fifth causes of action only.

SHAREHOLDER INDIVIDUALS:

25. David Ransford is a train service employee residing in or near Sioux City and has been a shareholder of the BNSF stock since fall, 1996.

26. John Turner is train service employee residing in or near Sioux City and has been a shareholder of the BNSF stock since fall, 1996.

Defendant BNSF:

27. Defendant BNSF is:

A. A Delaware corporation;

- B. headquartered in Ft. Worth, Texas;
- C. employing approximately 33,000 workers, does business and operates a line of rail in 28 states and is an “employer” under Iowa Law and the law of 27 other states;
- D. the nation’s second largest railroad system, it is a common carrier and a railroad as defined by the Railway Labor Act (“RLA”);
- E. operating in Iowa where it has substantial facilities, track, and train traffic including a terminal and facilities in Sioux City, Iowa and most of the managers involved in certain facts of this case are primarily located in Sioux City, Iowa.

GENERAL ALLEGATIONS

- 28. BNSF carries huge amounts of hazardous materials throughout its rail operations.
- 29. “Hazardous materials” is defined, *inter alia* by 49 C.F.R subchapter C, § 171.8 (p. 85) and “...means a substance of material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to the health, safety and property when transported in commerce, and has designated as hazardous under § 5103 of Federal Hazardous Materials Transportation Law (49 U.S.C. 5103).”
- 30. BNSF carries substantial amounts of low level nuclear waste throughout its rail operations.
- 31. BNSF is about to embark on carrying huge amounts of high level nuclear waste from all points of origination in its rail operation terminating at Yucca Mountain, Nevada.
- 32. BNSF currently is and plans to be a future carrier of hazardous materials including but not limited to high level radioactive fuel elements from nuclear reactors, BNSF STCC Code 28-197-10; high level radioactive isotopes, articles, and materials, BNSF STCC Code 28-197-11; high level radioactive special solids, BNSF STCC Code 28-197-45; high level radioactive material shipping containers, BNSF STCC Code 34-919-40; uranium flourides, oxides, etc, BNSF STCC Code 28-197-20; thorium and uranium metal scraps, BNSF STCC Codes 40-219-42, 45; low level radioactive waste, BNSF STCC Code 40-291-06; and other forms of liquid and solid hazardous waste and related materials, high level radioactive isotopes, articles, and materials, BNSF STCC Codes 40-48.
- 33. BNSF currently is and plans to be a future carrier or transfer carrier of these hazardous materials by transporting them throughout its 28 state service area in

heavily populated cities including but not limited to Chicago, Des Moines, Omaha, Sioux City, Council Bluffs, Denver, Minneapolis, Los Angeles, San Francisco, Portland, Las Vegas, and Seattle.

34. *Inter alia*, BNSF made a presentation January 21-23, 2002 at Santa Fe, New Mexico at a Packaging Transportation Conference representing that it could move high level nuclear waste as a low cost alternative, as a means of reducing pollution and that they could do it without any safety concerns.
35. A statutory and regulatory condition precedent to BNSF carrying hazardous materials low level nuclear waste and high level nuclear waste is the affirmative statement by the BNSF to federal and state regulators that it will safely and carefully transport these lethal materials in strict accordance with statutory and regulatory requirements.
36. BNSF knows or should know that federal and state rail transportation regulators rely on it for accurate and timely reporting of all safety concerns, issues, problems, personal injury accidents, property damage accidents, both latent and patent.
37. BNSF knows or should know that its customers, including the United States Government rely on it to safely move their property in compliance with all applicable regulations and standards.
38. BNSF knows or should know that its employees, including but not limited to the plaintiff organizations and individual plaintiffs, rely on it to safely move hazardous materials, low level and high level nuclear waste, and that these employees expect BNSF to notify them of any and all exposure to potential injurious effects of the cargo being carried.
39. BNSF knows or should know that state, county, municipal and other units of local government rely on it to comply with all applicable safety standards and regulations in order to safeguard the public and governmental property and operations.
40. BNSF has and is engaging in non-disclosure of its actual safety practices, omissions, and risks to the FRA, to other regulators, and to its shareholders and prospective shareholders.

41. BNSF has and is engaging in non-disclosure of its actual accident and/or injury incidents to the FRA, to other regulators, and to its shareholders and prospective shareholders.
42. The BNSF as part of its “Responsible Care at BNSF” web site provides a “rail carrier self-assessment protocol” and admits that it maintains “non-FRA reportable accident statistics.”
43. The Sioux City, Iowa Terminal Management and others have for at least 15 years and still is perpetrating a serious pattern and practice of directing employees to non-compliance with safety requirements
44. Rail workers at the terminal and elsewhere have been and are threatened and intimidated by BNSF if they engage in standard required inspections, tests and safety practices.
45. Some of these requirements and procedures arise under FRA provisions, some under BNSF Rules; some under both of those, and some under AAR (American Association of Railroads) recommended practices, many of these implemented by BNSF Circulars, Technical Specifications and Bulletins.
46. Upper BNSF management is and has been fully aware of this behavior by local management, has refused to act, and acts of local management are supported and condoned by the BNSF.
47. All railroad employees are required by law to obey Federal regulations, disregard of which can lead to civil penalties, including fines and disqualification.
48. They are also subject to discipline or dismissal by BNSF if they fail to do so.
49. All railroad employees are required to comply with BNSF operating rules, which often incorporate AAR & Federal requirements and they are subject to dismissal if they fail to do so, even if an officer told them to violate it. Management claims it has unrestricted discretion to dismiss any employee for any claimed reason, even if wholly fabricated at any time.
50. Railroad employees in this terminal face an impossible choice between being dismissed / disciplined if they do perform and comply with required tests, inspections and standards or being disqualified, and fined by the government if they do not perform such inspections and tests.

51. They may also be fired by BNSF officials in any terminal in the event one of the non-complying trains is inspected.
52. This has created an extremely hostile and hazardous work environment, since many tests and requirements are being conducted haphazardly or not at all, and the pressure from BNSF to choose between obeying the law and maintaining employment creates severe anxiety and fear.
53. BNSF continues these practices and has intensified them.
54. Safety practices which are routine in Lincoln, or the Twin Cities and, almost universally on BNSF are not required or done at the Sioux City, Iowa, terminal. This is and has become well-known to BNSF employees and officers in surrounding terminals, that safety practices are frequently not followed at Sioux City Terminal. These acts of Sioux City Terminal managers are known to and condoned by upper BNSF management.
55. Employees in the Sioux City Terminal have been repeatedly ordered or otherwise coerced to dispense with or not complete required testing of air brake systems on trains prior to departure; to skip many types of inspection of inbound and outbound trains for defective cars; not to switch out and remove defective cars from trains; to run trains without required rear-end and head-end monitoring and communication devices, and many other similar circumventions of rules and regulations.
56. When the employees do perform required safety tests they have been: removed from service, charged with insubordination, threatened with dismissal, berated and screamed at, generally threatened with punishment, and actually punished and singled out for retaliatory adverse treatment.
57. Employees reporting these problems to local or higher BNSF management or to state or federal authorities' are retaliated against harshly and frequently.
58. The employees have attempted all forms of internal efforts to correct or ameliorate these problems.
59. The reason that BNSF insists the crews disregard such procedures and requirements is that BNSF will be more profitable when train departures and overall operations can be expedited.

60. BNSF management directing the employees to circumvent detailed requirements for inspections, required equipment and procedures to avoid production of the congestion and delay problems arising from regulatory compliance
61. That in fact a great many necessary and required safety tests and inspections are carried out in an incomplete, inadequate and perfunctory method, if done at all at Sioux City Terminal as a result of the above acts by Defendant, and many trains are leaving with both known and unknown defects in equipment, and untested systems which have not had minimally adequate or proper operating tests, or in some cases none at all.
62. That a large volume of traffic moves through Sioux City Terminal, including a substantial volume of hazardous materials of many types, including anhydrous ammonia LP gas, liquid chloride, numerous flammable gases and liquids, ethyl alcohol, a wide variety of chemicals, the tracks are authorized and anticipated to carry nuclear waste.
63. FRA requirements are not a part of the collective bargaining agreements between UTU, BLE and BNSF, and are not bargainable.
64. BNSF maintains that safety rules, bulletins, and practice manuals are not part of the collective bargaining agreements- BNSF asserts sole discretion over safety requirements as a matter of management prerogative.
65. There is no clause requiring arbitration of safety retaliation issues in the collective bargaining agreements applicable, nor is there any type of provision covering retaliation for safety compliance.
66. BNSF uses a device called a 'switch' to permit trains to move from its mainline tracks onto sidings.
67. Locks are generally used on switches because, as early as 1912, there were reported cases of vandals moving the switch levers so that trains would derail or collide with other trains.
68. The BNSF has been using the same generic padlocks on its more than 100,000 switches for about 20 years.
69. A common BNSF key opens all switch locks.

70. There are thousands of keys for these locks floating around in 28 states in which BNSF does business:
- A. Current employees carry the keys;
 - B. A large number of ex-employees (including those who have been fired or laid-off) have these keys;
 - C. The keys are collectors' items are offered for sale for as little as \$6 at railfan swap meets, over the internet and in mailing lists; and
 - D. There are many counterfeit keys in circulation as well.
71. However, these locks are so simple to pick that ordinary cotter pins are routinely used to open them by even switchmen, are so insecure that a modest rap on them with a hammer can pop them open.
72. Historically and recently, vandals have been tampering with these locks, relining the switches, and causing serious damage and injuries.
73. Yet, the BNSF has not changed its procedures or its equipment nor utilized central track control ("CTC") which would guarantee that no such accident could occur.
74. BNSF has interfered with FRA investigations to try to have them re-classified by the FRA as employee negligence rather than as vandalism.
75. The inherent lethality of the cargoes being carried by BNSF now and in the future poses grave and unacceptable levels of risk to the plaintiffs, and every other interested party including property owners within miles of rail lines, and all units of government in those areas. This freight includes extremely hazardous materials which is carried through the heart of many of America's largest cities and smallest towns.
76. The risk of lethal disasters is increased by the willful actions of the BNSF in ordering its employees to disregard and not comply with federal safety standards.
77. The enhanced risk of lethal disasters is additionally enhanced by the failure and refusal of BNSF to inform the regulators of its reckless policies.
78. The enhanced risk of lethal disasters is further magnified by the laxness of the regulators who, in effect, have been captured by the regulated.

79. Statistics filed by the BNSF with the Federal Railway Administration show that there has been more than a 100% increase in human factor accidents on BNSF rail lines since 1996.
80. Yet the regulator whose databases contain this public information have reported to the public and the Congress in its Safety Insurance and Compliance Program, year-2002 accomplishments that human-factors-caused accidents had actually decreased.
81. Statistically significant beyond the 95% rate, the increase in BNSF human factor accidents is directly attributable to the massive decline in total numbers of employee hours spent on the job.
82. BNSF's statistics of total employee hours has dropped from 85.5 million in 1998 to 68 million in 2003, a decrease of 22.2%.
83. Upon information and belief, the influence of the Association of American Railroads and lobbyists for Class I railroads fully explains the laxness of the regulated by the FRA.
84. The total number of FRA inspectors has declined by significant numbers.
85. Notwithstanding the paucity of inspectors those inspectors found 337,230 defects in the 72,355 inspections performed as of February 5, 2004 on the BNSF.
86. In particular, FRA inspectors performed 8,687 inspections of BNSF hazardous materials shipments and reported 32,331 defects.
87. These defects included 11 occasions where train cars loaded with hazardous materials were put in the wrong placement in trains in direct contravention of federal requirements and safety standards.
88. The same hazardous material inspections demonstrated more than 2,000 safety defects with diesel locomotives, 3,646 defects of safety appliances of cars and locomotives, and more than 2,700 violation of safety regulations of power brakes of train cars and locomotives.
89. These hazardous material violations were not limited to the materials themselves or the equipment, but also included more than 1,000 violations of operating practices, all of which are strictly subject to federal regulation.

90. Furthermore, there are more than a 1,000 violations of signal requirements imposed by federal regulators affecting the movement of hazardous materials and more than 12,000 violations of track quality and inspection requirements.
91. The total number of defects found by FRA inspectors increased from approximately 25% from 2002 to 2003, a fact not mentioned by the FRA in its Safety Assurance and Compliance Program Report.
92. Consistent with disregard of federal safety requirements and laxness of the regulator the following is a list of just some of the accidents caused by the BNSF in the year 2003:
- February 5, 2003--Silsbee, Texas, a runaway cut of cars collided with the locomotives that were in pursuit in those cars.
 - February 13, 2003--Scotts Bluff, Nebraska, side collision.
 - March 2, 2003--Brush, Colorado, rear-end collision.
 - March 10, 2003--Seattle, Washington, a freight train struck the side of an opposing train.
 - March 18, 2003--Clarendon, Texas, a freight train derailed two locomotives and 28 cars.
 - March 21, 2003--Newcastle, Wyoming, a unit coal train derailed 35 cars.
 - March 29, 2003--Ogles, Texas, a freight train derailed 28 cars.
 - April 11, 2003--Olathe, Kansas, a unit coal train derailed 27 cars.
 - April 11, 2003--Slayton, Texas, a freight train derailed 6 cars resulting in a release of hazardous materials and a subsequent evacuation.
 - May 1, 2003--Lapine, Oregon, freight train collided head-on with a hi-rail vehicle.
 - May 2, 2003--Seattle, Washington, a freight train struck the rear-end of another train.
 - May 6, 2003--Dant, Texas, a freight train collided with a hi-rail vehicle.
 - May 5, 2003--Hazard, Nebraska, a work train collided with the rear-end of another train and the resultant derailment struck a third train.
 - May 17, 2003--Matfield Green, Kansas, an eastbound freight train struck the side of a westbound freight train.

- June 20, 2003--Minneapolis, Minnesota, a remote control yard switcher derailed 42 cars.
 - July 28, 2003--Bisbee, Texas, a freight train collided head-on with a standing train.
 - September 17, 2003--Chriesman, Texas, a freight train struck the rear-end of another train.
 - October 1, 2003--Udall, Kansas, a freight train struck a hi-rail vehicle sitting on the main track at an interlock.
 - The FRA does not provide December statistics for any year (for reasons unknown).
93. The FRA, consistent with its status as a ‘captured government agency’, reported for the year ending December 31, 2003, that it was proud of the safety record of the BNSF in light of the higher traffic volumes it was carrying.
 94. The BNSF files human factor accidents reports with the FRA and has approximately 50 categories of human error descriptions; but none of those categories include mismanagement as a possible source of human factor accidents.
 95. On information and belief, BNSF’s refusal to comply with federal safety requirements and standards, is, by itself, a form of human factor accident and should have been reported as such.
 96. DOE is about to contract with railroads including BNSF to haul nuclear waste for profit.
 97. DOE is informing the public and state and local government that using these railroads, including BNSF, is safe.
 98. DOE is wrong, it is not safe to move nuclear waste by rail across the BNSF.
 99. DOE could not lawfully enter into such contracts if it knew the truth of the unsafe conditions of BNSF operations.
 100. BNSF has not disclosed material facts to the DOE, shareholders, or other necessary parties about its inability to guarantee safe movement of nuclear waste across its system or even to assess risk/reward ratios for this material.
 - A. It has materially deficient track infrastructure.
 - B. It has materially deficient operating practices of its equipment.

C. It is partially uninsured (self-insured) and lacks financial resources to pay for a mass loss.

D. It has not disclosed prior haz-mat accidents including nuclear.

E. It has not disclosed details of any actual or proposed indemnity clause.

101. BNSF cannot be trusted to perform contractual terms since it has a long track record as a scofflaw because it purposely disregards legal requirements when it chose not tell the regulators and shareholders the truth about:

a. BNSF system wide thousands of unsafe switches;

b. BNSF causes of thousands of work related injuries;

c. BNSF disregards safety standards.

D. BNSF disregards worker protection laws, both federal and state, most recently in the secretive genetic testing of its injured workers.

E. Suppression of complaints by workers and shippers.

F. Failed to tell the truth about causing and not remediating environmental hazards such as denying culpability for the Mandan, North Dakota diesel spills which leached as much as 2 million gallons in the aquifer over 50 years.

102. BNSF actions are purposeful:

a. less reporting means less downtime, less cost of repair, less cost of operations, less regulator intervention;

b. no reporting means enhanced profit lines, keeping stock prices artificially high, and keeps stock ratings artificially high;

103. BNSF actions endanger:

a. employees by creating a higher risk of accident, injury, and death, adversely affecting families by the former facts, and creating incidents resulting in adverse job actions and discipline including firing.

b. property of BNSF, of ordinary citizens, and of federal, state and local government

c. health of the community since more accidents will happen, many in cities, many involving hazardous materials including nuclear shipments

d. financial health of BNSF itself since it is self-insured

104. BNSF has general and specific duties of safety to the general public.

105. BNSF has general and specific duties of safety toward its employees.
106. BNSF has general and specific duties of safety toward its customers.
107. BNSF has general and specific duties to its current and prospective shareholders disclose, discuss, and account for financially material operational risks.
108. BNSF has general and specific duties of and related to safety to federal, state, and local governments in the jurisdictions in which it operates or effects.
109. BNSF, one of only two Class I railroad companies operating west of the Mississippi River, uses its size and monopolistic/oligarchic position, by itself and through its role in its associations such as that of the American Railroads (“AAR”), to significantly influence and attempt to influence legislative and executive processes in all levels of government.
110. All governmental entities involved in the process of formulating and enforcing regulatory policy, procedures, and regulations, rely on the BNSF and AAR to provide accurate information concerning all aspects of rail economics and safety.
111. BNSF knows or should know that governmental entities involved in the process of formulating regulatory policy, procedures, and regulations, rely on the BNSF and AAR to provide accurate information concerning all aspects of rail economics and safety.
112. When the Congress of the United States enacted Nuclear Waste Policy Act, 42 U.S.C. § 10101, it declared that it is in the national interest to move to and store in a specially constructed facility inside Yucca Mountain, Nevada, all high level nuclear waste produced by the nation’s nuclear electric production facilities.
113. The United States Department of Energy (“DOE”) is charged with the responsibility of planning, promulgating, and implementing a system to transport safely high level nuclear waste from the nation’s nuclear electric production facilities to the Yucca Mountain facility.
114. DOE plans to use rail carriers including the BNSF to transport significant amounts of high level nuclear waste.
115. DOE studies and decisions relying on those studies specifically state that they assume the accuracy of the safety reporting of the railroads to the Federal Railway Administration (“FRA”).

116. *Inter alia*, to accommodate demands of the private power industry and nuclear material transporters, the Congress of the United States enacted and extended the Price-Anderson Act, 42 U.S.C. §2011, 2210.

117. The Price-Anderson Act (“PAA”), *inter alia*, limit risks of damage cap for nuclear accidents to nuclear producers to the extent of the Fund (currently \$9.3b net), and empowers DOE to indemnify transportation contractors for up to \$560 million, waives defenses, and purports to pre-empt state law tort claims.

118. Congress extended PAA with explicit reference to and knowledge that railroad transportation of high level nuclear waste was intended based on assurances from regulators, rail associations like AAR, and BNSF and other rail carriers that these materials could be safely moved.

119. To implement PAA the federal government promulgated an indemnity agreement to be used by nuclear contractors including transporters such as railroads and it is found at 10 C.F.R. §140.92 Appendix B.

Division One: Action for declaratory judgment defining duties under FRA safety sensitive disqualification procedures.

120. All previous paragraphs are hereby incorporated by reference as though fully set forth in this paragraph.

121. The “managerial misconduct” flaunts the FRA proscription of rail carrier violations of rail safety standards which control operating procedures, define equipment fitness for use, and mandate inspection and testing.

122. The manager misconduct violates those FRA regulations found at 49 C.F.R., Subpart C, §171.1(b-c), which prohibit a rail carrier from transporting any cargo in violation of hazardous materials requirements.

123. This manager misconduct, unremedied by the BNSF pursuant to the terms of 49 C.F.R. Subpart C, §225.33(a)(1-10?), violates the mandate of the FRA which prohibits a rail carrier from violating rail safety standards, reflected in numerous sections of 49 C.F.R, parts 209-240.

124. This managerial conduct also violates the conditions established by the provisions of 49 U.S.C. 20101 et seq.

125. Violations of the type contained in paragraphs 60-63, supra, are defined by FRA regulations, 49 C.F.R. Subpart D, §209.303(a-b) as ‘safety sensitive’ violations, among the most serious kind of FRA safety violations.

126. Federal law requires the FRA to perform its non-delegable duty to initiate proceedings against management employees as well as non management employees for violating safety sensitive requirements.

127. The FRA received actual notice of the facts contained in Par 65 both by receipt of copies of prior judicial complaints and by supplemental information provided to it.

128. Despite the actual notice of the violations of federal laws, regulations, and standards, the FRA has not initiated a proceeding against management officers under 49 C.F.R., Subpart D, §209.305.

129. BNSF failed to report to the FRA its management misconduct.

130. BNSF failed to request that FRA commence disqualification proceedings based on this management misconduct.

131. Plaintiffs cannot initiate complaints against their own managers without realistically expecting the retaliation described in paragraphs 34-35, supra, , and which is a unfortunately a normal part of their BNSF workplace experience.

132. Plaintiffs have standing to assert these claims and are entitled to declaratory judgment which, inter alia, answers the following questions concerning their relative rights and duties:

A. Is the BNSF legally required to contemporaneously notify the FRA of potential violations of FRA safety sensitive requirements, regulations, and/or standards committed by its management employees?

B. Is the BNSF legally required to contemporaneously request that the FRA commence disqualification proceedings against its management employees for potential violations of FRA safety sensitive requirements, regulations, and/or standards?

C. Is the BNSF, as an agent or deputy of the FRA, required to commence its own disqualification proceedings for potential violations of FRA safety sensitive requirements, regulations, and/or standards by its management employees?

D. If “C” is answered in the affirmative, does BNSF have a duty to report its action to the FRA for parallel or subsequent proceedings or other reasons?

E. Does the FRA, once it has possession of any credible information identifying an incident, pattern or practice of events evidencing possible violations of duty for safety sensitive management employees, have a duty to commence disqualification proceedings?

F. If “E” is answered in the affirmative, is the duty to investigate management employees the same duty as to investigate non-management employees?

133. If this Court determines that BNSF has any legal duties pursuant to paragraphs 71 (a-c), supra, Plaintiffs request preliminary and permanent injunctive relief so that they are protected from current and future management misconduct described in this Complaint.

134. Injunctive relief of this type is the only real protection of their legal rights possible since:

A. The non-management employees cannot refuse to comply with federal regulations and standards without being subjected to civil and criminal penalties;

B. The non-management employees cannot refuse to comply with BNSF orders without being subjected to BNSF investigations and retaliation including but not limited to being fired;

C. The non-management employees and their unions cannot protect themselves by agreeing to only to strictly comply rules without being dragged into expensive and destructive judicial proceedings to defend themselves against accusations of violations of unfair labor practices of ‘working by rule’.

135. Money damages by themselves do not provide an adequate remedy for the management misconduct by BNSF.

136. The Court has the ability to fashion the requested remedies through, inter alia:

A. its declaratory judgment powers;

B. its equitable powers;

- C. its ability to supplement the federal common law of labor law;
- D. To recognize an implied remedy for violating whistle-blower protection pursuant to 49 C.F.R., Part 225, §225.33 (a)(2), and
- E. Waive bond requirements in this type of action..

Prayer for relief:

137. Wherefore, Plaintiff's prays for a declaration of the parties' rights and duties, for injunctive and ancillary relief proscribing the offending conduct, and such other relief as are appropriate including costs of litigation and attorney's fees.

SECOND CAUSE OF ACTION:
VIOLATIONS OF THE IOWA PUBLIC POLICY DOCTRINE

138. There is a strong public policy supporting the obedience and enforcement of required and necessary safety procedures and equipment in public transportation, including specifically railroad transport; and the Plaintiff's and other employees acts obeying the rules; refusing orders to disobey or opposing and reporting order to disobey are all protected activities the Iowa Public Policy Tort Doctrine.

139. That the removal from service, threats of dismissal, dismissed, discipline, harassment, punishment and other hostile work environment all constitute adverse employment actions.

140. That the protected activities are the determining factor in the adverse actions.

141. The acts continue to be done and continue to cause apprehension and emotional distress as well as income loss to named and unnamed Plaintiffs, as well as risk to the public and property of Sioux City and areas of track in that area of track and facilities controlled from Sioux City.

Prayer for relief:

142. Plaintiff's prays all relief afforded at law and equity, including back pay, emotional distress, costs of litigation, attorney's fees and exemplary damages to the extent allowed, all to Plaintiff's damage in the sum of \$250,000., and for injunctive relief proscribing the offending conduct in the future, and a declaration of the parties' rights and duties. Plaintiffs' request costs and attorneys fees herein.

THIRD CAUSE OF ACTION:
DECLARATORY JUDGMENT PERMITTING RIGHT TO ENGAGE IN
SAFETY AND/OR POLITICAL STRIKES

143. The named individuals and labor organizations cannot lawfully, acquiesce, or comply with BNSF's demanded actions.

144. BNSF demands, *inter alia*: circumvention of safety tests and inspections required and necessary under FRA regulations, BNSF rules, and AAR- industry recommended practices. These demands are illegal under laws of the State of Iowa, the State of Nebraska, and under Federal law and regulation (49 U.S.C § 20101 et seq, 49 CFR Sec. 200 et seq.)

145. Nothing in the collective bargaining agreements permits BNSF to require circumvention of required safety regulations as a condition of employment.

146. A provision or practice requiring such actions in a collective bargaining agreement would be unlawful per se.

147. The individual plaintiffs and their union representatives have the unlimited right to engage in political strikes to protest the fact that:

a. the federal government has not allocated sufficient financial and human resources to these issues of public and transportation worker safety related to the movement hazardous waste.

B. The federal government has not permitted open, public, and honest disclosure and discussion of these issues of public and transportation worker safety related to movement of hazardous waste.

C. Congress, under Price Anderson Act, has created such serious ambiguities about the rights of rail workers injured in a nuclear accident as to cause them to refuse to work on movement of nuclear materials.

D. The BNSF has not been stopped by the FRA from engaging in an unlawful practice to dismiss and discipline employees as punishment for performing required tests and inspections.

148. The individual plaintiffs and their union representatives have the unlimited right to engage in safety strikes to protest the unsafe conditions which threaten the life, livelihood, and property rights of all Americans.

PRAYER FOR RELIEF

149. Plaintiffs specifically request declarations of law that Plaintiff labor organizations have a right to engage in political and safety strikes over the issues listed in Paragraph 147, *supra*, that an order be issued protecting the individual Plaintiffs from retaliation for having brought this action, and for such other relief as is appropriate.

FOURTH CAUSE OF ACTION: **DECLARATORY JUDGMENT STATING BNSF** **DUTIES UNDER FEDERAL SECURITIES LAWS**

150. The Plaintiffs and Defendants are entitled to declaratory judgment to clarify their rights and responsibilities arising under the complex web of relevant federal and state statutes, regulations, and agency and judicial decisions which include, *inter alia*:

A. The Nuclear Waste Policy Act (“NWPA”), 42 U.S.C. § 10101, *et. seq.*, (NWPA provides that the federal government will take title to all high level nuclear waste to be moved off the property of nuclear electric generating companies and shipped to Yucca Mountain.)

B. The Price-Anderson Act (“PAA”), 42 U.S.C. § 2011, 2210, *et. seq.* (PAA empowers the federal government to enter into a contract with a rail transporter of all high level nuclear waste whether to Yucca Mountain or other places).

C. The False Claims Act (“FCA”), 31 U.S.C. § 3729, *et. seq.* (FCA provides that a government contractor violates federal law and is liable if it knowingly presents to the United States a false or fraudulent claim for payment or approval).

D. The Staggers Act (“Staggers”), 49 U.S.C. §10101, *et. seq.*,

E. 49 U.S.C. 5126;

F. The 1933 Securities Act, 15 U.S.C. §78a-78ll:

G. The 1934 Securities Act, 15 U.S.C. 77a-77aa, and its implementing regulations and interpretations found in 17 CFR §240.10b5; 2. S.E.C. Reg. S-K, §229.30SEC SAB No. 92 (6/93) , SFAS #5, APB Opinion #22, and FRR #36 interpretation of 303.

151. The terms of a rail transportation contract necessarily will include federal payment for the movement of the nuclear waste and full indemnity from damage claims in exchange for its safe and timely movement.

152. The federal government's promise to provide indemnity may mean that if there is a liability claim proven against the rail carrier arising out of the transport of the high level nuclear waste, the federal government will pay the damages up to the limit of \$50 million and use its power to prohibit any recoveries by Plaintiffs, whether individual, corporate, or governmental, beyond that amount.

153. Provides that a government contractor violates federal law and is liable if it knowingly presents to the United States a false or fraudulent claim for payment or approval, 31 U.S.C. § 3729(a)(1), or knowingly makes, uses a false record or statement to get a false or fraudulent claim paid or approved by the Government, 31 U.S.C. § 3729(a)(2), or conspires to do so, 31 U.S.C. § 3729(a)(3). "Knowing and knowingly" are defined as meaning that a person "has actual knowledge of the information, acts in deliberate ignorance of the truth or falsity of the information, or acts in reckless disregard of the truth or falsity of the information, and no specific proof of intent to defraud is required.". 31 U.S.C. § 3729(b). A "claim" is defined any including "any request or demand, whether under a contract or otherwise, for money or property which is made to a contractor ... if the Government will reimburse such contractor or other recipient for any portion of the money or property which is requested or demanded." 31 U.S.C. § 3729 (c).

154. DOE has or soon will be entering into contracts with BNSF to enable it to haul high level nuclear waste for profit.

155. BNSF will be required by DOE to execute the indemnity contract found at 10 C.F.R. §140.92 Appendix B.

156. DOE has and is relying on the representations made by the BNSF that it has such good and proven safety systems and safety record that the DOE can logically conclude that the BNSF has the capacity to safely move high level nuclear waste.

157. In turn, DOE is informing the public and state and local government that using BNSF and other rail carriers is a very safe method to move high level nuclear waste to Yucca Mountain from all over the United States and that the citizenry and its representatives has nothing to worry about.

158. DOE is wrong, it is not safe to move nuclear waste by rail across the BNSF.

159. DOE would not enter into such contracts if it knew the truth of the unsafe conditions of BNSF operations.

160. The Plaintiffs request that the Court issue a declaratory judgment by providing the legal answers “yes” to the following questions, the result of which then shall define their relative rights and responsibilities:

- a. has the BNSF made a “claim” under the FCA if the statements made by the BNSF to the federal government to request the creation of the Price Anderson Act based indemnity agreement are false or fraudulent?
- b. do the Plaintiffs have standing to file a FCA *Qui Tam* action if the BNSF made a “claim” under the FCA if the statements made by the BNSF to the federal government to request the creation of the Price Anderson Act based indemnity agreement are false or fraudulent in advance of the indemnity agreement being made or high level nuclear waste not yet having been transported?
- c. if an indemnity agreement was proffered, accepted, high level nuclear waste transported and there was a resulting mass liability claim, would the federal government refuse to honor the indemnity agreement if it was induced by false or fraudulent claims?
- d. should the risk of claims for indemnity by BNSF being refused by the federal government because they were induced by false or fraudulent claims be disclosed to shareholders and prospective shareholders in its annual reports, 10-K, 10-Q, proxy solicitations, Management Discussion and Analysis, all as required pursuant to the 1934 Securities Act, 15 U.S.C.

§78a-78ll, the 1933 Securities Act: 15 U.S.C. 77a-77aa, 17 CFR §240.10b5; S.E.C. Reg. S-K, §229.303, SEC SAB No. 92 (6/93) , SFAS #5, APB Opinion #22, and FRR #36 interpretation of 303?

E. Is BNSF subject to assessments, excise taxes, or other forms of possible acts to spread the liability risks either before or after an incident or accident or do doctrine such as illegal exactions or taking protect the corporation from such government actions?

161. Plaintiff shareholders Ransford and Turner bring this action as a derivative action on behalf of themselves. After liability is established in this matter, they intend to amend the Complaint to represent all other union employee stockholders of BNSF that are similarly situated.

162. Plaintiffs have made no efforts to have this suit brought for BNSF by its board of directors because any effort to do so would be futile. Efforts would be futile because, *inter alia*, BNSF does not listen to its employees, particularly about safety related issues, BNSF obviously has made a decision not to disclose to the investing public it is carrying high level nuclear materials and the risks inherent in that activity

163. BNSF has a duty to disclose to the investing public that it is now and intends to in the future carry high level nuclear waste, that it cannot guarantee the safety of its movements of this material and other highly hazardous material, that its safety practices create undisclosed and excessive financial risk to the corporation, and that the law is so ambiguous that it cannot make assurances to its shareholders that the corporation will be a going concern in the event of a major incident or accident involving these materials, that it has not sought relief from appropriate federal regulatory authorities.

164. As its prayer for relief under this Fourth Cause of Action, the Plaintiffs request that the Court:

- a. to enter declaratory judgment as requested in Paragraph 116;
- b. to enjoin, prohibit, and bar the BNSF from entering into any agreements with the federal government to transport high level nuclear waste;

- c. to order BNSF to fully and accurately report to its shareholders and prospective shareholders the truth about its safety record and risks of its operation including but not limited to its transportation of hazardous materials including high and low level nuclear materials;
- d. to order such supplemental equitable relief as it deems appropriate under the circumstances;
- e. and to award reasonable attorney fees and costs to the Plaintiffs and their counsel.

FIFTH CAUSE OF ACTION:
DECLARATORY JUDGMENT UNDER PAA DEFINING
RAILROAD WORKERS RIGHT TO RELIEF

165. Price-Anderson Act (“PAA”) denies monetary compensation to transportation industry workers injured in the course of moving high level nuclear materials workers if they have worker’s compensation rights.

166. Railroad workers do not have traditional worker’s compensation rights but instead FELA governs their rights.

167. FELA is a fault driven system and railroad employees may not recover unless the carrier is negligent in some regard.

168. Railroad employees need a declaratory judgment clearly enunciating their rights to recover under PAA in the event of their injury related to movement of nuclear materials.

Prayer for relief:

169. Plaintiffs requests a declaratory judgment that PAA provides that rail transportation workers are eligible for benefits and damages because they are not part of a workman’s compensation system.

PLAINTIFFS REQUEST TRIAL BY JURY

Dated: _____

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**ATTACHMENT VI
ASSOCIATION OF AMERICAN RAILROADS
COMMENTS ON THE NUCLEAR REGULATORY COMMISSION'S
PACKAGE PERFORMANCE STUDY**

May 27, 2003

BEFORE THE
NUCLEAR REGULATORY COMMISSION

Draft NUREG-1768:

Solicitation of Public Comments on Spent Nuclear Fuel Transportation Package Performance Study Test Protocols

COMMENTS OF THE
ASSOCIATION OF AMERICAN RAILROADS

On behalf of its member railroads, the Association of American Railroads (AAR) submits the following comments in response to the Nuclear Regulatory Commission's (NRC) solicitation of public comments on spent nuclear fuel transportation package performance study test protocols. AAR expects that its member railroads will be involved in all rail shipments of spent fuel to a geologic repository. Thus, AAR's members have a substantial interest in this proceeding. This submittal reinforces comments made at the public hearing held at NRC's headquarters in Rockville, MD on March 6, 2003.

I. Should the impact tests be conducted as drops from a tower, and proposed in this report, or along a horizontal track, using a rocket sled?

AAR believes that the tests should be performed in the manner that allows the best scientific data to be collected. While the horizontal impact test might have the benefit of being able to better visually demonstrate cask safety to the public in the same orientation the cask will be transported in practice, it may be harder to get the precise speed desired at impact. Whatever method is used, the data should be collected to allow the modelers to predict the speed at which the cask will fail, and also allow the report team to compare the forces needed to fail the cask with the forces that occur in real world accidents to determine if there are any potential real world accidents that are capable of breaching the cask. By understanding this relationship, designers and system operators might be able to design the system to prevent these potential forces from occurring.

II. Are 60 to 90 miles per hour a reasonable speed range for the rail cask, given that the frequency for a rail cask impacting a hard rock surface within this speed range is 1 to 10 per year?

III. Is the 75 miles per hours rail cask impact speed proposed by the NRC staff appropriate?

The 60 - 90 mile per hours speed range, and the impact speed of 75 miles per hour proposed by NRC staff seem reasonable. Freight trains operate up to 70 miles per hour. For that reason, trains on opposite tracks could be operating at a relative speed of 140 miles per hour. Given that the tests being proposed are going to utilize unyielding surfaces, the 75-mile per hour test speed appears to be reasonable. However, as indicated above, the work should be performed in such a way as to be able to determine what forces would be necessary to fail a cask, so that a system can be developed to determine whether a cask could be breached in real world accidents. That information could be used to design cask systems that avoid those forces.

IV. What should the impact speed be for the back breaker impact test?

While AAR does not have a position on the speed of the back breaker test, the back breaker test should be performed in such a way as to collect data necessary to determine the

effect of a crush load if possible. Crush loads are not required for large type B packages. Trains consist of multiple cars. When trains are involved in derailments, cars can and do pile on top of each other. For that reason, crush loads are a real possibility. While the back breaker test is not a crush load test, data collected from a back breaker test that could be used to determine what would happen to if one cask were to impact upon another cask, thereby subjecting one of them to a crush load. The purpose of such an analysis would be to determine if there are credible railroad accidents that might occur that have the potential to breach the cask.

V. What should be the duration and size of the cask fire tests?

VI. What should be the cask position relative to the fire?

The AAR has no position on either of the two questions directly, but we would like to see whatever fire testing that is done to be completed in such a way so that the data can be used to determine when a cask could fail, based upon the heat input. That information could be used by emergency responders to assist in determining the amount of time they have to take action to reduce the heat input with water, or other means to prevent that occurrence. The data might also be used for cask and or cask system design.

AAR's member railroads are committed to transporting SNF safely. AAR encourages NRC to utilize the package performance study to gain new insight into the safe transportation of SNF. AAR looks forward to working with NRC to make the rail transportation of SNF as safe as reasonably possible.

Respectfully submitted,

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**ATTACHMENT VII
RARE OR SENSITIVE SPECIES OCCURRENCES
IN AND NEAR THE PROPOSED YUCCA MOUNTAIN
RAIL CORRIDOR IN NEVADA
Compiled by the Nevada Natural Heritage Program (NNHP)
27 February 2004**

**RARE OR SENSITIVE SPECIES OCCURRENCES IN AND NEAR THE PROPOSED
YUCCA MOUNTAIN RAIL CORRIDOR IN NEVADA**

Compiled by the Nevada Natural Heritage Program (NNHP), 27 February 2004

(For definitions and further explanations of codes in the columns, visit <http://heritage.nv.gov/keycodes.htm> or call 775-687-4245)

Scientific Name	Common Name	NNHP Record No.	NNHP Grank	NNHP Srank	NNHP List (Y=sensitive, W=watch, N=not tracked)	Endemic to Nevada (Y=Yes, P=Possible)	Wetland Species	ESA/USFWS Status	BLM Status	USFS Status	State of Nevada Protected	Date Last Observed	County	Township and Range	Sections	Total Records in NV
RARE SPECIES OCCURRENCES MAPPED WITHIN THE YUCCA MOUNTAIN RAIL CORRIDOR																
ANIMALS																
Bufo microscaphus	Southwestern toad	2	G3G4	S1S2	Y		Y		N			1913-10-09	Lincoln	004S067E	08	13
Gopherus agassizii	desert tortoise	30	G4	S3	Y			LTNL	S	T	YES	1987-PRE	Nye	013S048E	15	445
Gopherus agassizii	desert tortoise	445	G4	S3	Y			LTNL	S	T	YES	2002-07-17	Nye	014S049E	10	445
Rhinichthys osculus ssp.	Meadow Valley speckled dace	8	G5T2	S2	Y	Y	Y		N			1984-09-05	Lincoln	003S067E	28	12
PLANTS																
Astragalus eurylobus	Needle Mountains milkvetch	4	G2	S2	Y			xC2	N			1985-05-21	Lincoln	002S068E	26;30	6
Astragalus funereus	black woollypod	16	G2	S2	Y			xC2	NC	S		1992-06-17	Nye	011S048E	29;30	17
Astragalus funereus	black woollypod	8	G2	S2	Y			xC2	NC	S		1992-06-17	Nye	011S048E	30	17
Astragalus pseudiodanthus	Tonopah milkvetch	1	G2Q	S2	Y				C	W		1978-06-25	Nye	001N046E 001N045E	30;31 36	15
Astragalus pseudiodanthus	Tonopah milkvetch	11	G2Q	S2	Y				C	W		1981-05-23	Nye	001N045E	27	15
Cryptantha welshii	White River catseye	7	G3	S3	Y	Y		xC2	N			1985-06-03	Lincoln	003S067E	22	40

Cymopterus ripleyi var. ripleyi	Ripley biscuitroot	15	G3G4T2?Q	S2?	W	Y						1981-05-23	Nye	001N045E	27	15
Cymopterus ripleyi var. ripleyi	Ripley biscuitroot	10	G3G4T2?Q	S2?	W	Y						1978-06-25	Nye	001N046E	31	15
Mentzelia tiehmii	Tiehm blazingstar	2	G1G2	S1S2	Y	Y			N			1980-08-29	Lincoln	002N062E	13	7
Penstemon arenarius	Nevada dune beardtongue	2	G2G3	S2S3	Y	Y		xC2	N	S		1978-07-08	Nye	009S046E	20	32
Sclerocactus schlesseri	Schlesser pincushion	10	G1Q	S1	Y	P		xC2	N		YES	1992-05-09	Lincoln	002S067E		13
ADDITIONAL RARE SPECIES OCCURRENCES POSSIBLY WITHIN THE YUCCA MOUNTAIN RAIL CORRIDOR (DUE TO LOCATIONAL UNCERTAINTY)																
ANIMALS																
Bufo nelsoni	Amargosa toad	13	G1G2	S1S2	Y	Y	Y		N		YES	1996-08	Nye	011S047E	10	14
Microdipodops megacephalus albiventer	Desert Valley kangaroo mouse	1	G5T2	S2	Y	Y		xC2	N			1932-05-30	Lincoln	002S064E	10	4
Pyrgulopsis micrococcus	Oasis Valley pyrg	3	G3	S2	Y		Y	xC2	N			1998-PRE	Nye	011S047E	10	18
PLANTS																
Asclepias eastwoodiana	Eastwood milkweed	2	G2Q	S2	Y	Y		xC2	N	S		1937-05-27	Nye or Esmeralda	001S043E	04	31
Astragalus eurylobus	Needle Mountains milkvetch	6	G2	S2	Y			xC2	N			1986-05-08	Lincoln	004S068E	08	6
Coryphantha vivipara var. rosea	Clokey pincushion	18	G5T3	S3	N						YES	1971-06-06	Nye	004N050E		61