



"Joe Strolin" <jstrolin@nuc.state.nv.us> on 01/10/2008 03:11:40 PM

RRR000662

To: "Jane Summerson" <Jane_Summerson@ymp.gov>, <Jane_Summerson@Notes.YMP.gov>, <eis_office@ymp.gov>
cc: "Lee Bishop" <Lee_Bishop@ymp.gov>
Subject: State of Nevada Comments on DOE's Draft Supplemental Yucca Mountain EIS

LSN: Relevant - Not Privileged
User Filed as: Excl/AdminMgmt-14-4/QA:N/A

Dear Dr. Summerson,

Attached are pdf files containing (1) the State of Nevada's Comments on DOE's Draft Supplemental 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 (DOE/EIS-0250F-S1D) and (2) a cover letter formally transmitting the State's comments.

Comments on the Draft Rail Corridor SEIS and Draft Rail Alignment EIS are being sent by separate email.

I would appreciate it if you would acknowledge receipt of these comments by replying to this email and/or by calling my office at 775-687-3744.



Thank you for your attention to this matter.

Joe Strolin

Joseph C. Strolin, Administrator
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(775) 687-5277 (Fax) Cover Letter - Draft YM SEIS Comments.pdf

 -

State of Nevada Comments - Yucca Mountain Draft SEIS Final.pdf

KENNY C. GUINN
Governor

STATE OF NEVADA

ROBERT R. LOUX
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January 9, 2008

Dr. Jane Summerson
EIS Office
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1551 Hillshire Drive
Las Vegas, NV 89134

Re: State of Nevada Comments on DOE's Draft Supplemental 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 (DOE/EIS-0250F-SID), 72 FR No. 197, October 12, 2007, 58071-58074

Dear Dr. Summerson:

Attached please find the State of Nevada's comments on the above-referenced Draft SEIS. Please note that the document includes a number of Attachments that are incorporated by reference and made part of the overall State comments. All attachments are available electronically on the internet, and links have been provided in the text of the 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,

A handwritten signature in black ink, appearing to read "Robert R. Loux".

Robert R. Loux
Executive Director

RRL/cs
Attachments

cc Governor Gibbons
Attorney General Catherine Cortez Masto
Richard Bryan, Nevada Commission on Nuclear Projects
Nevada Congressional Delegation
Affected Local Governments and Tribes

**STATE OF NEVADA COMMENTS
ON DOE'S DRAFT SUPPLEMENTAL 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 (DOE/EIS-0250F-S1D), 72 FR
NO. 197, OCTOBER 12, 2007, 58071-58074**

The following are the comments of the Nevada Agency for Nuclear Projects on the subject Supplemental Environmental Impact Statement. Additional comments are provided, under separate cover, in the Agency's comments on the Department of Energy's *Draft Supplemental 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 – Nevada Rail Transportation Corridor and Draft Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250F-S2D and DOE/EIS-0369D).

Our February 28, 2000 comments on the *Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada*, and our July 5, 2001 comments on the *Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County Nevada* are herein incorporated by reference to the extent that they apply to the unchanged aspects of the currently proposed repository system and program design analyzed in these previous documents.

[Pursuant to the Nuclear Waste Policy Act, Congress overrode the Governor of Nevada's veto of the Secretary's February 14, 2002 Site Recommendation for Yucca Mountain, which was accompanied by DOE's original Yucca Mountain FEIS. Once this Congressional action occurred in the summer of 2002, DOE had 90 days under the NWPA to submit a license application to NRC for a construction authorization. It is safe to presume that the Site Recommendation, the President's authorization, and the Congressional action on Yucca Mountain were all premised in significant part on the content of the FEIS.]

It is now more than 5 years past the statutory deadline for submission to NRC of a license application, and the Draft SEIS that is the subject of these comments illustrates the numerous and wide-ranging changes DOE has made in the project, and in its impacts, including an entirely new packaging and transportation system affecting more than 30 states whose Congressional representatives voted in 2002.

It is Nevada's position that the Draft SEIS so materially departs from the FEIS that it can no longer be presumed to be authorized by the President and the Congress and,

accordingly, DOE should return to the President and the Congress with a new Site Recommendation based on the new SEIS/FEIS.]

These comments are also intended to apply to the Draft Nevada Rail Corridor SEIS (DOE/EIS-0250F-S2D) and the Draft Rail Alignment EIS (DOE/EIS-0369D) where common issues, impacts, and/or program elements exist, and are, therefore, incorporated by reference into the State of Nevada's comments on those documents.

Nevada also associates itself and agrees with the U.S. Nuclear Regulatory Commission's comments on the subject draft SEIS that are attached to a December 13, 2007 letter from NRC's Michael Weber to Edward F. Sproat, Director, Office of Civilian Radioactive Waste Management (ADAMS: ML073390683).

Purpose of the Draft SEIS

[This Draft Supplemental Environmental Impact Statement indicates that its purpose is two-fold. First, it is to assist the Nuclear Regulatory Commission in meeting its mandate, under the Nuclear Waste Policy Act, to adopt, "to the extent practicable," DOE's environmental impact statement for a Yucca Mountain repository program. Adopting the DOE's EIS, as supplemented, would ostensibly assist NRC in meeting its requirements under NEPA to prepare an EIS for its decision to issue a license to DOE for a Yucca Mountain repository, should it make such a decision. Since no Record of Decision is planned by DOE for its Final SEIS, the Draft SEIS should have been prepared in a more useful format that makes transparent what specific parts of the 2002 Final Yucca Mountain EIS are being changed or supplemented. NRC ultimately will be responsible under the National Environmental Policy Act (NEPA) for providing a comprehensive Draft EIS for public review and comment to support its potential licensing decision. The expectation of the Nuclear Waste Policy Act was that NRC would be presented with a Final EIS that it could adopt in large part as an aid to streamlining the work involved in meeting the short three year limitation on license application review and hearing. The purpose of the Act is not served by DOE providing NRC with a six-year-old Final EIS, along with its multiple supplements and changes, without even including, at minimum, a comprehensive guide to the changes it has made.] 2

[Our comments here are intended to supplement our previous comments which we have incorporated by reference. The primary purpose of these comments is to point out some issues that if adopted by the NRC, will be revisited in the course of our participation in NRC's NEPA process associated with a DOE Yucca Mountain repository license application. Review of a NRC draft Yucca Mountain EIS will be subject to the decision of the U.S. Court of Appeals for the D.C. Circuit in *Nuclear Energy Institute, Inc. v. Environmental Protection Agency*, 373 F. 3d 1251 (D.C. Cir. 2004 ("NEI")). The court noted in *NEI* that "Nevada will be permitted to raise its substantive challenges to the FEIS in any NRC proceeding to decide whether to adopt the FEIS", and it agreed with NRC's acknowledgment that "it would not be 'practicable' to 3

adopt the FEIS unless it meets the standards for an 'adequate statement' under the NEPA and Council on Environmental Quality's NEPA regulations." 373 F.3d at 1313-14.]

[The second stated purpose of DOE's Draft SEIS is to provide the analysis and decision basis for the DOE to proceed with its plan for infrastructure improvements prior to receipt of a Construction Authorization from NRC at and near the Yucca Mountain site. The work would be done under the jurisdiction of DOE self-regulation rather than NRC regulations. Under NRC jurisdiction, this work likely would require the granting of a Limited Work Authorization, which in the past NRC has said it would not consider. 4

The work would include construction of about 20 miles of new and replacement access road construction, including a paved road on the crest of Yucca Mountain, about 20 miles of new electric transmission line, development of a 30-acre central operations area including 5 support buildings, and construction of a new sample management facility. The work was first proposed in a June 2006 draft Environmental Assessment, which subsequently was withdrawn. It is now proposed, described, and analyzed in this Draft SEIS without some of the alternatives described in the original EA. After issuance of the Final SEIS, DOE would issue a Record of Decision for implementation of the proposed infrastructure improvements.

On August 8, 2006, we commented on the DOE's EA for infrastructure improvements, and those comments remain relevant, and are herein incorporated by reference. None of the work is necessary for DOE's safe occupation of the Yucca Mountain site. It is all planned to be done by DOE in anticipation of its receipt of a Construction Authorization from NRC for a repository, and would not be needed were a Construction Authorization not granted. Also, it is not authorized by the Nuclear Waste Policy Act to be undertaken in the period between completion of Site Characterization and receipt of a NRC repository license. And finally, DOE has been denied a water right by the Nevada State Engineer for development and operation of the repository, which includes use of the water that would be required to accomplish the proposed construction. Nevada's denial of water rights is in federal litigation brought by DOE which currently remains stayed.

Taking no action should be the preferred alternative for infrastructure improvement. It results in no harm, and does not preclude necessary maintenance of existing facilities.]

The No-Action Alternative

[The Draft SEIS retains a significant deficiency that we noted and commented on in our review of the Draft Yucca Mountain EIS, in 1999 and 2000. This Draft SEIS incorporates by reference the No-Action Alternative framed by DOE in its 2002 Final Yucca Mountain EIS (FEIS). Neither of the two scenarios for No-Action conform with requirements and regulations that alternatives considered by an agency must be reasonable. One scenario is that the spent nuclear fuel would be maintained at existing 5

reactor sites for 100 years, and then all care and maintenance would wholly be terminated for the remainder of a 10,000 year period. The other is that the spent nuclear fuel would be maintained and institutionally controlled at these same reactor sites for a 10,000 year period. It is inconceivable, and unlawful, that either of the scenarios would ever be implemented, which means that neither is a reasonable alternative. Nevada's challenge of this violation in the U.S. Circuit Court of Appeals for the District of Columbia was unripe by Congressional action on DOE's Yucca Mountain site recommendation. However, the Court was explicit that, if NRC adopts DOE's No-Action Alternative, the FEIS will become subject to legal challenge. The SEIS makes note that our comments were considered, but does nothing to remedy the substantive deficiencies noted by Nevada. Instead, it leaves it for the NRC, and possibly later the Court of Appeals to decide.]

The Proposed Action

[The incorporation of the Transportation, Aging and Disposal (TAD) Canister System has driven significant changes from the Proposed Action described in the 2002 FEIS. Until the actual TAD design is known, which it will not be even at the time of the Final SEIS, many of the impacts of the TAD implementation can, at best, only be bounded, and with any such bounding comes uncertainty. There is uncertainty in DOE's reliance on the June 2007 TAD Performance Specification because since its issuance there has been talk among the vendors who will be designing the TAD that for purposes of improving efficiency the TAD capacity, and therefore its size and weight specifications should be increased. This could affect many of the impact analyses and bounding scenarios that are in the Draft SEIS, and may not be known until after the Final SEIS is released to the NRC and public. Alternative TAD specifications that could affect the impacts beyond the levels of those that were analyzed or bounded in this Draft SEIS should be included and the impacts analyzed.] 6

[The proposed Aging Facility, with a capacity of 21,000 MTU of commercial spent nuclear fuel, is functionally a Monitored Retrievable Storage (MRS) facility, which the Nuclear Waste Policy Act prohibits from being sited in Nevada. DOE claims that a virtue of the Aging Facility is that it decouples waste receipt from waste emplacement, which is exactly the intended purpose of the MRS. We understand that there is a need for some reasonable level of surge capacity at the repository surface facility to optimize operations. A one year surge storage capacity at the site, amounting to about 3,000 MTU of commercial spent nuclear fuel under DOE's current plans for emplacement (but ignoring emplacement of federally owned waste), might be a reasonable level to smooth potential logistical upsets in the system. This is another issue DOE has left to be decided by NRC, and possibly the Court of Appeals. Nevada has submitted extensive comments and objections to NRC's Chairman opposing DOE's proposed "aging facility," and those comments, which were copied to DOE, are also incorporated herein by reference.] 7

[The Proposed Action includes installation of "drip shields" during a ten-year period after the NRC has approved a license amendment to close the repository. Current plans call for this to begin at least 90 years from the time of first waste emplacement.] 8

According to DOE, it could be as much as 290 years. With the exception of the drip shield base, the drip shields will be fabricated from titanium. According to Table 4-36, fabrication of the portion of the total of 11,500 titanium drip shields needed each year over the ten-year closure period would require acquisition of an amount of titanium equivalent to about 10 to 22% of the current annual available supply of titanium, based on DOE's analysis and short-term projections. It is impossible to know, or even make credible assumptions about the availability of titanium 100 to 300 years from now. It is also impossible to know or speculate on what the price of this relatively expensive metal will be in those future years. Stockpiling over a long period of time is not prudent, and Congress would probably not be willing to finance such a venture. The possibility of substituting some other metal for titanium at the time of closure would have upsetting effects on the Total System Performance Assessment that was the basis for the original license decision, since DOE selected titanium for its properties and performance characteristics in what it believes to be the post-closure Yucca Mountain environment. Trying to find and justify the use of another drip shield material at some late date before closure is a highly uncertain and risky proposition. If it was proposed as a fall-back position in today's planning, it is unlikely it would survive license application review.

It is also difficult to predict the condition of the emplacement drifts 100 to 300 years in the future, since once emplacement begins in a drift, the drift condition can not be maintained or remediated. It is possible that some or all of the 108 planned emplacement drifts will be impassible to the remote controlled equipment needed to install the drip shields due to degradation of the drift and its engineered components. DOE has analyzed drift degradation in a number of exercises over the years, but the results have been inconsistent, and now increasingly optimistic as drift degradation is becoming more important in the DOE's conceptual model for post-closure drip shield and waste container failure.

Given these insurmountable uncertainties, DOE's plan to install drip shields decades to hundreds of years in the future, and its reliance on this plan in its repository performance assessment is not supportable. The proposed action should include drip shield emplacement contemporaneous with waste emplacement on a drift by drift basis, or no performance credit should be taken for drip shields in DOE's Total System Performance Assessment. Nevada has submitted a detailed letter on this subject to NRC's Chairman, and that letter is hereby incorporated by reference into these comments.]

Preclosure Impacts

[In the Draft SEIS, DOE describes the airspace restriction that it believes will reduce the probability of a military aircraft crash impacting the repository facilities to below the level at which consequences need to be analyzed. Although DOE states that it has "controlling authority" over most of the airspace analyzed, it has not been able to reach any agreement with the Air Force over the specific restrictions it wants to apply. Further, the "controlling authority" is not vested in the Yucca Mountain program, but

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rather seems to accrue to the Nevada Test Site. DOE must obtain a Congressional Land Withdrawal for the Yucca Mountain site in order to comply with the NRC requirement to demonstrate ownership and control of the site. There is no certainty that "controlling authority" would transfer to the Office of Civilian Radioactive Waste Management with a land withdrawal, and thus there is no certainty that the airspace restrictions on Air Force flights DOE says it needs will be realized and implemented.

For the remaining portion of the airspace analyzed, DOE must obtain special-use airspace permission from the Federal Aviation Administration to apply the same needed flight restrictions. It is also uncertain whether this can be accomplished.

With no certainty that any of the conditions necessary for DOE to be able to apply the flight restrictions it says it needs, for purposes of this SEIS DOE should have provided a comprehensive consequence analysis of military aircraft crash events at the repository site, including ordinance scenarios. We note that such an analysis was done in summary form in regard to a sabotage scenario involving a commercial aircraft.]

[The Draft SEIS makes no mention of a detailed radiological survey of the entire proposed land withdrawal area. Since much of the land is in Area 25 of the Nevada Test Site which was previously used to test experimental nuclear rocket engines, DOE should provide current data and analyses demonstrating that there is no residual contamination of the site before it is separated from the Nevada Test Site, whose responsibility it would be to carry out any needed decontamination. Offsite gamma contamination from a rocket motor test is known from at least one test in 1968, and there was a later report in the media that some irradiated rocket fuel had been buried somewhere in Area 25. At the time, DOE deferred any search for the missing material.] 10

Post-closure Impacts

[DOE's Total System Performance Assessment for this Draft SEIS is markedly different from that used by DOE in the 2002 FEIS and is continuing to be modified for use in DOE's license application to NRC. The Final SEIS must have a TSPA that is the same as that in the license application for it to be able to be adopted by the NRC. The TSPA SEIS is also at risk of lacking value for its intended purpose because it is constructed under the assumption that the proposed EPA standard and NRC licensing rule will become final in the form in which they were proposed. At this time there is no certainty that will be the case, as it remains unknown what their content will be when they are finally issued. It has been well over two years since the EPA proposed its standard, which received extensive critical comment. If the proposed rule becomes final in the form proposed, it assuredly will face litigation which, if successful, ultimately will result in changes needing to be made in the TSPA. The Final SEIS should not be issued until both the EPA Standard and the conforming NRC licensing rule are in final form, and the SEIS is redrafted to comply with these regulations.] 11

[Potential igneous activity disrupting the Yucca Mountain repository has been analyzed in a 1996 Probabilistic Volcanic Hazard Analysis (PVHA) performed through expert elicitation. This analysis is not directly cited in the Draft SEIS, nor is it mentioned that an expert panel is now performing an updated analysis based on significant new data collected since the time of the original analysis. This new analysis is not expected to be completed before DOE plans to issue its final SEIS, but its results could have important affects on the modeling of disruptive igneous events, and on the TSPA itself. This SEIS should acknowledge the new work that is under way, and it should explain what effect lack of the updated volcanic hazard analysis may have on the analysis presented in the SEIS and in the TSPA.]

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[This Draft SEIS does not describe how DOE plans to comply with requirements of the Resource Conservation and Recovery Act (RCRA) as it applies to burial of hazardous metals that can be released to groundwater. The metals would largely be derived from corrosion of the 11,000 waste packages, and their burial is prohibited under current RCRA regulations.]

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Cumulative Impacts

[This Draft SEIS describes Inventory Modules 1 and 2 in a manner similar to that in the final Yucca Mountain EIS, with the exception of Modules 1 and 2 being 130,000 MTU commercial spent nuclear fuel rather than 105,000 MTU in the expanded capacity case. The Proposed Action for the Draft SEIS is for a 70,000 MTU repository (the statutory limit), with commercial spent fuel being 63,000 MTU of the total. There is no explicit statement in the discussion that the Nuclear Waste Policy Act would have to be amended to permit more than 70,000 MTU in the case of no second repository having been approved. The Draft SEIS does not provide an underground layout that indicates how 130,000 MTU could be accommodated, nor does it describe what site characterization information exists that demonstrates 130,000 MTU could be accommodated. The spent fuel projection relied on for the 130,000 MTU does not include spent fuel from any new power reactors. New license applications are being made now, with strong governmental encouragement and incentives for more. The increase from 105,000 MTU to 130,000 MTU and the exclusion of consideration of there being new reactors generating more spent nuclear fuel suggests that DOE believes the capacity for expansion of the repository is essentially unbounded within the foreseeable limits of new reactor approvals. There is no demonstrated basis for such an assumption, especially when DOE has yet to demonstrate to the regulatory authority that a Yucca Mountain repository can safely accept any spent nuclear fuel and high-level radioactive waste.]

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If DOE is going to include an expanded repository capacity as a reasonably foreseeable future action, it should determine on a technical basis what the safe capacity of a Yucca Mountain repository could be and include that in the analysis of cumulative impacts. The projected need for repository capacity has no bearing on the technically

demonstrated safe capacity of a repository. Any such changes should also be reflected in DOE's analysis of the No-Action Alternative.]

[Included in Inventory Module 2 is disposal of commercial Greater-Than-Class-C Waste and DOE Special-Performance-Assessment-Required waste, with the acknowledgment that to do so would require authorizing legislation by Congress. Despite the current lack of such authorization, DOE, in 2007, published its *Notice of Intent to Prepare an Environmental Impact Statement for the Disposal of Greater-Than-Class-C Low-Level Radioactive Waste.* (72FR140, July 23, 2007, pp. 40135-40139) with one of the named site alternatives being the yet to be approved Yucca Mountain repository. Nevada submitted comments on the Notice of Intent on September 20, 2007, strongly opposing this alternative. Those comments are herein incorporated by reference.]

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[While the Draft SEIS Appendix E analyzes a "Representative Sabotage Scenario" that involves the crash of a commercial jetliner into the surface facility that could result in a 4.0 rem dose to the maximally exposed offsite individual, this is not a sufficient substitute for a thorough systematic review of the potential environmental impacts of a sabotage or terrorist event. A recent decision of the Ninth Circuit Court of Appeals in a case involving spent fuel storage at a nuclear power plant seems to require a more rigorous analysis than appears in this Draft SEIS. See *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016 (9th Cir. 2006).]

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Impacts of Transportation

[DOE has chosen to assess the environmental impacts of repository transportation in a fragmented fashion, with some addressed in the Draft SEIS, some addressed in the Draft Rail Corridor SEIS, and some transportation impacts addressed in the Draft Rail Alignment EIS. These comments by the State of Nevada, on the transportation impacts of the Draft SEIS proposed action, also incorporate by reference in their entirety the State's comments on the Draft Rail Corridor SEIS and the Draft Rail Alignment EIS. Despite issuing three separate NEPA documents, DOE has either failed to address or inadequately analyzed numerous important repository transportation impacts.]

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Procedural Concerns

[DOE provided only limited hearing opportunities outside Nevada (one hearing in California, and one hearing in Washington, DC) despite the fact that the TAD Canister proposal could directly affect nuclear facilities in more than 30 states, and that repository transportation activities would likely affect more than 40 states, more than 600 counties, and more than 40 Indian Nations. DOE provided only 90 days for public review and comment, and denied requests by Nevada and other parties for an additional 30-60 days review time, despite the size, scope, and importance of the NEPA documents. DOE failed to clarify the relationship of these NEPA documents to the 2002 FEIS for Yucca Mountain, in particular regarding the absence of a contingency plan for reliance on the

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FEIS in the event that the proposed TAD system and/or the proposed Caliente rail alignment were to be rejected.]

Spent Nuclear Fuel Characteristics

[The Draft SEIS barely acknowledges that spent nuclear fuel is dangerous. The Draft SEIS provides no useful information on the surface dose rate of the design basis fuel. Nevada's analyses of the DOE representative PWR spent fuel (4.2% initial enrichment, burn up 50,000 MWDt/MTHM, 10 years cooling time) estimate a contact surface dose rate in excess of 35,000 rem/hour, capable of producing an unshielded lethal exposure in 1-2 minutes. 19

Considering current industry trends towards higher initial enrichments and higher burn-ups, the spent fuel characteristics assumed in the Draft SEIS are no longer representative or bounding for the time at which shipments to Yucca Mountain might begin, currently estimated to be about 2017-2020. Moreover, DOE has abandoned its original plan of shipping the oldest fuel first, and could now ship fuel cooled less than 10 years under certain circumstances. Under the Draft SEIS proposed action, DOE could ship much hotter spent fuel (burn-up 60,000-70,000 MWDt/MTHM, 5 years cooling time). The impacts of shipping such fuel are not evaluated in the Draft SEIS.

If the Yucca Mountain project proceeds, the radiological hazards associated with repository transportation would be largely determined by the radiological characteristics of commercial spent nuclear fuel. These radiological characteristics would be the primary driver of risks and impacts resulting from the loading and unloading of shipping casks, routine transportation activities, transportation accidents, and acts of terrorism or sabotage against repository shipments. The Draft SEIS does not adequately address the relationship between the radiological characteristics of spent fuel at the time of shipment, and the resulting transportation impacts.]

ALARA (As Low As Reasonably Achievable)

[The Draft SEIS proposed action rejects recommendations by the National Academy of Sciences, the General Accounting Office, the State of Nevada, and other parties, that DOE ship the older, or oldest, spent fuel first. Shipping older fuel first would reduce radiological exposures from both routine operations and off-normal events (severe accidents, terrorism, sabotage). By choosing to ship hotter fuel first, when older fuel is available for shipment, DOE's proposed action violates the NRC's ALARA (as low as reasonably achievable) policy. The Draft SEIS does not evaluate the proposed action from an ALARA standpoint. Indeed, ALARA is barely mentioned in the Draft SEIS.] 20

Radiological Region of Influence (ROI)

[The Draft Rail Alignment EIS defines the radiological region of influence (ROI) for incident-free transport as the area 0.8 km (0.5 mi) on either side of the rail alignment 21

centerline, and defines the radiological ROI for accidents and sabotage, the area 80 km (50 mi) on either side of the rail alignment centerline. The affected environment for radiological impacts includes individuals and businesses within these ROIs. The Draft SEIS fails to apply the radiological ROI concept to existing railroads and highways in Nevada and other states that would be traversed by shipments to Yucca Mountain. More than 100,000 Nevadans live within the 0.5 mile ROI for routine radiological impacts, and more than 2 million Nevadans live within the 50 mile ROI for radiological accidents and sabotage. The Draft SEIS does not adequately assess doses to workers and the public from routine operations, and the creation of elevated exposure zones at near-route locations: accident prevention, security, and emergency response planning requirements and costs are not adequately addressed; doses to workers, responders, and public from severe accidents and successful terrorist attack or sabotage are not adequately addressed; economic losses from severe accidents and/or successful terrorist attack or sabotage, and cleanup and recovery costs resulting from release of radioactive materials are not adequately addressed; and stigma & perceived risk impacts are not adequately addressed.]

Transportation Impacts of TAD Canister System

[The transportation impacts of the proposed action cannot be fully evaluated based on the information presented in the Draft SEIS. There are no final TAD canister and over-pack designs (at the time of Draft SEIS publication, only “proof of concept” designs existed). The NRC must approve TAD transport and storage components separately (under 10CFR Part 71 & 72), and no TAD certification applications have yet been submitted to the NRC. TAD system costs and financial arrangements are unknown and not addressed in the Draft SEIS. Based on the preliminary concepts, the proposed TAD system is not compatible with dry storage systems currently in use at civilian nuclear power plants, and the impacts of this are not adequately assessed. A number of utilities have identified specific problems with use of the proposed TAD system at civilian nuclear power plants, none of which are addressed in the Draft SEIS.]

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DOE offers no meaningful alternative to the proposed TAD canister system. Under the Draft SEIS No Action Alternative, “DOE would not construct a repository at Yucca Mountain.” DOE made the decision to build the revised repository design around the TAD system without ever having examined the transportation impacts of such a course of action. The Draft SEIS does not evaluate the TAD system against other alternative approaches despite the fact that there is no assurance that TADs can be utilized in the manner and to the extent DOE proposes. DOE made the TAD decision without NEPA documentation and without examining feasible alternatives.

The Draft SEIS proposed action creates major uncertainties about repository transportation. The TAD Canister system requires rail transportation. Yucca Mountain lacks rail access. The estimated cost of the proposed Caliente railroad has escalated from \$800 million in 2002 to \$2.5-3.0 billion in 2007. Strong opposition in Nevada is likely to delay or prevent rail access. One-third of utility shipping sites lack rail access. Post 9/11 security concerns about cross-country rail shipments through major cities using TAD

canisters for shipments are not adequately assessed. DOE has provided no contingency plans for national transportation in the event that rail access to Yucca Mountain is not available.]

Overweight Truck (OWT) Shipments

[The Draft SEIS assumes that non-rail shipments would be by OWT. The Draft SEIS contradicts previous DOE studies (1986 EA, 2002 FEIS, 2007 Transportation Concept of Operations, 2007 Draft National Transportation Plan) that assume legal-weight truck (LWT) for non-rail shipments, without any explanation for the new assumption, or any specific analysis of the impacts. The Draft SEIS ignores past U.S. nuclear industry reliance on LWT for spent fuel shipments. The Draft SEIS acknowledges that OWT shipments would be complicated by state permit requirements, but fails to assess the impacts of states permit requirements and other procedural and operational obstacles. The Draft SEIS ignores the obvious increase in routine radiological impacts that would result from repeated OWT stops for permit checks and inspections, and the increased possibility for accidents, terrorism, and sabotage.]

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Shipment Safety and Security

[The Draft SEIS assessment of transportation safety and security is deeply flawed. The Draft SEIS does not consider worst case accidents – it simply assumes that such combinations of factors “are not reasonably foreseeable” without any justification or analysis. The Draft SEIS underestimates the consequences of severe accidents involving long duration fires. The Draft SEIS underestimates the consequences of a terrorist attack or act of sabotage. The Draft SEIS inappropriately dismisses potential for human error to exacerbate consequences of accidents or terrorist attacks without explanation or analysis. The Draft SEIS fails to evaluate the potential for unique local conditions to exacerbate consequences of accidents or terrorist attacks. DOE superficially acknowledges, but fails to seriously consider, transportation safety and security analyses prepared by the State of Nevada (“an opposing viewpoint”). The Draft SEIS acknowledges clean-up costs after a very severe accident could reach \$10 billion. The DOE’s Landscan process for adjusting the census numbers (to determine affected populations) is not available for review, and it is impossible to determine how many people live within the region of influence. The Draft SEIS also fails to consider reasonable criticality potential and consequences for high-level waste or spent fuel during a terrorist incident. Indeed, one terrorist scenario could be to induct criticality in a shipping cask through the intentional or inadvertent injection of water into the container.]

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Additional Escorts

[The Draft SEIS (page 6-3) provide no basis for assuming that the additional escorts will be sufficient to protect shipments from the current design basis threat for nuclear sabotage, let alone future revisions to the design basis threat over the duration of repository preclosure operations (50 years).]

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Dedicated Trains

[The Draft SEIS (page 6-3) states that “most shipments” will use dedicated trains. Because DOE anticipates making some rail shipments by general freight service, the Draft SEIS must present a separate assessment of these risks. Nevada is particularly concerned about the potential impacts of general freight rail shipments through Las Vegas and/or Reno-Sparks.]

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Sabotage Release Fractions

[The Draft SEIS (page 6-7) continues to ignore the consequences of a terrorist attack using one or more weapons that completely perforate the shipping cask, or a combination of weapons specifically designed to breach, damage, and disperse the cask contents. The potential for such attacks is documented in the attachments to these comments. The new references cited by DOE do not address such impacts. Moreover, the venturi effect created by full perforation of a shipping cask would likely negate the reduction in impacts asserted by DIRS 181279 and DIRS 104918.]

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Impacts of Severe Transportation Accidents

[The Draft SEIS (pages 6-17 to 6-20) improperly applies probabilistic risk analysis to severe transportation accidents. Attachments to these comments document the uncertainties associated with estimating frequency of occurrence for what DOE calls “reasonably foreseeable accidents,” and recommend an alternative approach, comprehensive risk assessment, which analyzes consequences of accidents much more severe than those evaluated by DOE in the Draft SEIS. Moreover, the Draft SEIS ignores the evidence presented in DIRS 181756 that evaluation of accident consequences must consider unique local conditions, for example regarding accident locations along potential rail and highway routes through the City of Las Vegas and Clark County.]

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Cost of Cleanup

[The Draft SEIS (pages G-52 to G-54) characterizes the transportation accident cleanup costs provided by the State of Nevada as “worst cases” and “not reasonably foreseeable.” This is another instance in which DOE has improperly applied probabilistic risk analysis to severe transportation accidents. The cost estimates provided by the State of Nevada in DIRS 181756, assumed that credible worst case truck and rail accidents occurred in Las Vegas, reflecting unique local population and building characteristics, unfavorable weather conditions, and less than optimal emergency response. This is precisely the type of analysis that DOE should have provided in the Draft SEIS. The cleanup costs for a sabotage incident estimated in DIRS 181892 are comparable to cleanup costs estimated in studies of large radiological dispersal devices (“dirty bombs”) in major urban areas.]

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Unique Local Conditions

[The Draft SEIS (pages G-54 to G-55) ignores the evidence provided by the State of Nevada that unique local conditions could result in accident and incident frequencies and/or consequences greater than those evaluated in the Draft SEIS. The “maximum reasonably foreseeable” accidents evaluated by DOE do not adequately represent the potential impacts of transportation accidents and incidents in Nevada. The Reno Rail Trench on the Union Pacific mainline is a prime example of a unique local condition that requires location-specific impact assessment in the Draft SEIS. DOE must consider the stigma impacts and public perception of risk, especially impacts on downtown tourism; accident prevention, security, and emergency response planning; probability and consequences of severe accidents; consequences of successful terrorist attack or sabotage, and the symbolic value of shipments through the Reno Rail Trench as a target for terrorist attack or sabotage.]

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Human Error and Transportation Accidents

[The Draft SEIS (page G-52) ignores past instances in which human errors in cask fabrication and cask loading actually occurred during NRC-licensed shipments, and created conditions that could have compromised cask performance in the event of a transportation accident or sabotage event. Attachments to these comments document the potential that such human errors could occur during repository shipments. DOE provides no evidence to support its assertion that NRC regulations will adequately address this issue, or that NRC regulations can prevent willful violation of NRC regulations.]

31

Comprehensive Risk Assessment

[The Draft SEIS (page G-55) merely asserts that the transportation probabilistic risk assessment is valid, without responding to the detailed criticisms presented by the State of Nevada. The Draft SEIS misses the point made by Nevada: when probabilistic risk assessment is used under conditions of uncertainty, it should be balanced by evaluation of credible worst case events, such as the accident and sabotage scenarios suggested by Nevada. The transportation sensitivity analyses for reduced TAD use, and constrained national rail routing, performed by DOE in Appendix A, do not evaluate the most significant transportation radiological risk factors (such as spent fuel cooling time), and therefore do not respond to Nevada’s safety and security concerns.]

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[The reduced TAD use option (75% of commercial spent fuel) may be more realistic than the proposed action (90% TAD use), based on current transportation constraints at one-third of the reactor shipping sites, but this does respond to Nevada’s contention that large numbers of legal-weight truck shipments will likely be required under any realistic modal mix. The national rail route option (pages A-5 to A-8) is a self-serving response to Nevada’s concerns that a wide variety of factors (not just “heavy traffic congestion along northern cross-country rail corridors”) could result in large numbers of rail shipments being routed through Las Vegas if the Caliente rail line is developed. The TRAGIS route

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analyses (shown in DIRS 181377) used for this option are clearly constrained, by blocking certain rail routes in Illinois, to prevent the model from routing traffic to the BNSF system via Kansas City, which could route shipments to Caliente through California and Las Vegas. Moreover, the discussion in Appendix A ignores recent upgrading of the Union Pacific mainline between El Paso, Texas, and West Colton, California, ("the New Sunset Route") which will make that route more attractive for spent fuel shipments from current and new reactor sites in the Southeast.]

Impacts of Transportation Sabotage

[The Draft SEIS (pages 6-20 to 6-23) ignores evidence, including terrorism studies funded by DOE, that DOE nuclear activities may be particularly attractive symbolic targets for sabotage or terrorist attacks. Further, the Draft SEIS ignores evidence that attacks using one or more weapons that completely perforate the shipping cask, or a combination of weapons specifically designed to breach, damage, and disperse the cask contents, could result in consequences more severe than those evaluated by DOE. The potential for such attacks is documented in the attachments to these comments. DOE presents no evidence to support of its assertion that the factors identified by the State of Nevada "could affect the chances of success but not the outcome of the sabotage event." State of Nevada contractors are currently preparing an updated consequence analysis of a two-weapon attack on a 21-PWR TAD transport cask, which results in full perforation of the cask, and a release of 8,000-36,000 curies of cesium-137.]

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Other Nevada Transportation Impacts

[The Draft SEIS (pages 6-41 to 6-42) ignores evidence presented by the State of Nevada that certain types of accidents, for example accidents involving military aircraft and/or vehicles carrying munitions, could result in more severe consequences than those evaluated in the FEIS or in the Draft SEIS. The estimated radiation doses to members of the public from Nevada transportation (Table 6-15) ignore evidence presented by the State of Nevada that such doses could be considerably higher, depending upon the number of shipments, vehicle and train speeds, and location and duration of vehicle and train stops. The potential for such impacts is documented in the attachments to these comments. Moreover, the potential for any measurable radiation doses to members of the public in Las Vegas, as a result of repository shipments, and/or the creation of any elevated radiation exposure zones along routes through Las Vegas, could result in significant localized stigma and perceived risk impacts, which are not addressed in the Draft SEIS.]

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Shipments into Nevada from California

[The Draft SEIS does not fully evaluate potential shipments into Nevada from California. Under the Proposed Action, DOE would ship 9,500 rail casks and 2,700 truck casks to Yucca Mountain over 50 years. If there were to be no second repository, DOE would ship 24,000 rail casks and 5,000 truck casks. According to the Draft SEIS, about 8% of rail

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shipments would enter Nevada from California if the Caliente rail line were to be developed, compared to about 21% for the Mina rail line. About 32 % of truck casks would enter Nevada from California. The Draft SEIS ignores the potential for larger numbers of rail cask shipments into NV from CA, for Caliente or Mina options (>4,400, or >45% of total under proposed action). The Draft SEIS ignores the potential for large number of LWT shipments into NV from CA if no rail access (>24,000, >45% of total under proposed action). The larger number of shipments from California would increase the number of shipments through Las Vegas if the Caliente rail line is developed.]

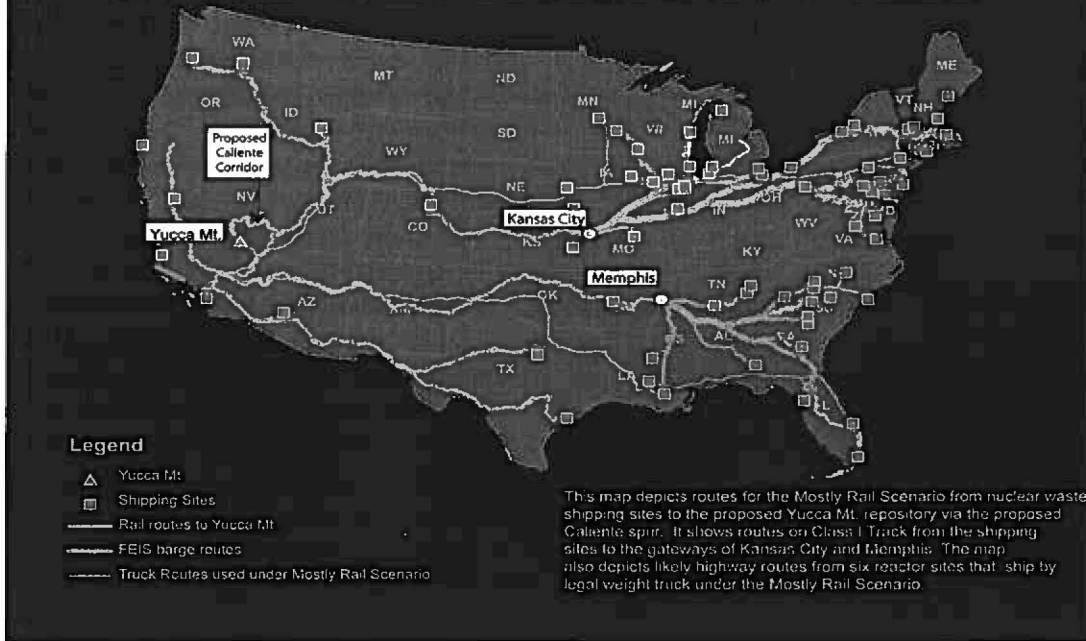
Transportation Routes

[The Draft SEIS shows only “representative routes” for shipments to Yucca Mountain, and fails to identify specific routes from generator sites. 37

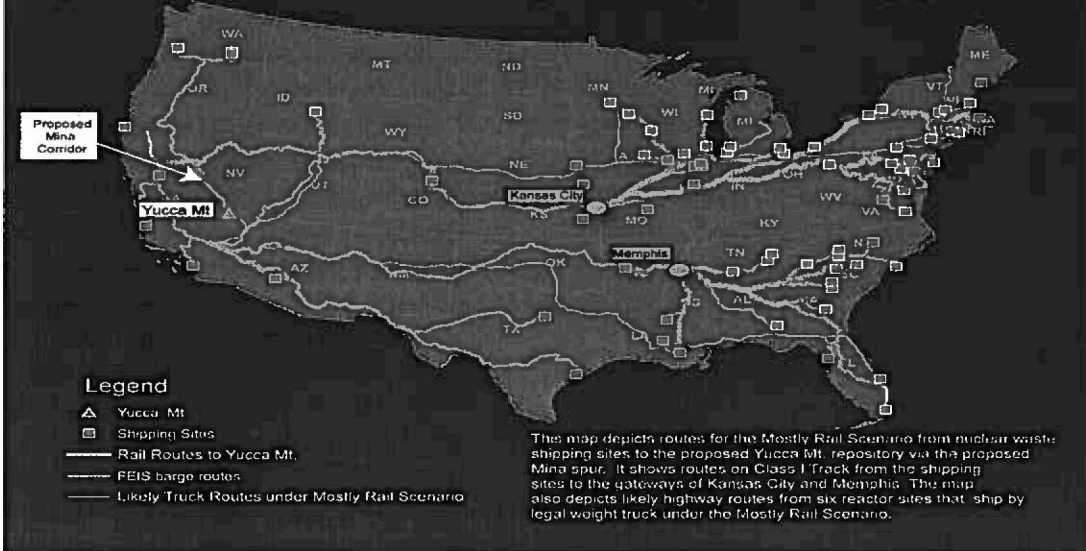
There is no reason why preferred and alternative national shipping routes could not have been specified in the Draft SEIS. In the absence of identified routes, it is not possible to adequately assess impacts on states, cities and communities affected by SNF and HLW shipments. The approach taken by DOE fails to identify the affected environment, as required under NEPA. The approach taken by DOE is a departure from the routing approach used by DOE in the Draft and Final EIS for WIPP.

The rail routes shown in the Draft SEIS do not include those already identified by the Union Pacific and BNSF as “preferred routes” to Caliente, even though that information was readily available to DOE during the Draft EIS scoping and development process. The Draft SEIS gives only cursory attention to impacts to metropolitan Las Vegas as a result of rail shipments via the Caliente rail line. Likewise, impacts from truck shipments to Yucca Mountain through the Las Vegas metro area are not adequately addressed. The following maps prepared by Nevada contractors more accurately depict the rail routes that DOE would actually use for repository shipments.]

Potential Rail Routes to Yucca Mt. via Proposed Caliente Spur (Suite of Routes from Kansas City and Memphis Gateways)



Potential Rail Routes to Yucca Mt. via Proposed Mina Spur (Suite of Routes from Kansas City and Memphis Gateways)



National Academy of Sciences Recommendations

[The Draft SEIS, in Appendix H, provides an overview of the findings and recommendations of the 2006 report by the National Academy of Sciences (NAS) Committee on Transportation of Radioactive Waste entitled *Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States* (DIRS 182032). However, the Draft SEIS, the Draft Rail Corridor SEIS, and the Draft Rail Alignment EIS, fail to adopt key recommendations of the NAS study, including:

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- An independent examination of security should be carried out before the commencement of repository shipments;
- Risks can be reduced by shipping the older fuel first;
- DOE should identify and make public preferred highway and rail routes to the repository as soon as possible;
- Potential adverse social and economic impacts of repository shipments are, for many members of the public, as important as health and safety impacts, and special government efforts will be needed to manage social and economic impacts;
- Serious consideration be given to taking the transportation program out of the DOE repository program, or out of DOE altogether.]

Socioeconomic Impacts of SNF and HLW Transportation

[The 2002 Final Yucca Mountain EIS failed to assess the potential stigma impacts associated with the transportation of SNF and HLW on state, cities and communities through which such shipments would travel. State of Nevada research and research done by numerous social scientists working independently over the past two decades have demonstrated (a) that risk perception and stigma induced impacts can and do occur in relation nuclear waste transportation (and other nuclear activities)¹ and (b) that such impacts can be identified and quantified using available assessment methods.² The final Repository SEIS should contain a comprehensive evaluation of potential risk perception and stigma impacts resulting from the extensive, wide-ranging and extraordinarily long-term duration shipping campaign contemplated in the Proposed Action.]

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¹ Such impacts encompass a broad range of economic effects, including property value diminution, losses to key economic sectors of states'/cities' economies, impacts on economic development, impacts on tourism, impacts on population, and others.

² Reference the attached report titled, *A Mountain of Trouble: A Nation at Risk – Report on Impacts of the Proposed Yucca Mountain High-Level Nuclear Waste Program* (February 2002). Also see comments 2.24 and 2.25 contained in the State of Nevada's Comments on DOE's Draft Nevada Rail Corridor SEIS (DOE/EIS-0250F-S2DE) and Draft Rail Alignment EIS (DOE/EIS-0369D).

ATTACHMENTS

The following attachments are incorporated by reference into the formal comments of the State of Nevada on DOE's Draft Nevada Rail Corridor Supplemental EIS and Draft Rail Alignment EIS:

State of Nevada's comments on DOE's Draft Yucca Mountain EIS (February 28, 2000)
<http://www.state.nv.us/nucwaste/eis/yucca/ymdeis.htm>

State of Nevada and Clark County joint comments on the Supplement to the draft Yucca Mountain EIS (July 5, 2001)
<http://www.state.nv.us/nucwaste/news2001/nn11299.htm>

State of Nevada comments on DOE's notice of intent to prepare an EIS for the alignment, construction and operation of a rail line to Yucca Mountain (May 25, 2004)
<http://www.state.nv.us/nucwaste/news2004/pdf/nv040525ocrwm.pdf>

State of Nevada Comments on the Department of Energy's Draft Environmental Assessment for the Withdrawal of Public Lands for the Proposed Caliente Rail Corridor
<http://www.state.nv.us/nucwaste/news2005/pdf/nv050923doe.pdf>

State of Nevada Comments on DOE Draft Environmental Assessment for Proposed Infrastructure Improvements for the Yucca Mountain Project
<http://www.state.nv.us/nucwaste/news2006/pdf/nv060808doe.pdf>

State of Nevada comments on DOE's amended notice of intent to prepare an EIS for the alignment, construction and operation of a rail line to Yucca Mountain (December 11, 2006)
http://www.state.nv.us/nucwaste/news2006/pdf/nv061211ocrwm_rail.pdf

State of Nevada's comments on DOE's notice of intent to prepare a supplement to the final Yucca Mountain EIS (December 11, 2006)
http://www.state.nv.us/nucwaste/news2006/pdf/nv061211ocrwm_nei.pdf

The Transportation of Spent Nuclear Fuel and High-Level Radioactive Waste , By Planning Information Corporation
<http://www.state.nv.us/nucwaste/trans/1pichome.htm>

Nuclear Waste Transportation Security and Safety Issues
Available on LSN at: <http://nvlsn.nv.gov/documents/NEV0000491.PDF>

A Preliminary Study of Sabotage and Terrorism as Transportation Risk Factors Associated With the Proposed Yucca Mountain High-Level Nuclear Facility
<http://www.state.nv.us/nucwaste/trans/jballard.htm>

A Mountain of Trouble: A Nation at Risk - Report on Impacts of the Proposed Yucca Mountain High-Level Nuclear Waste Program
<http://www.state.nv.us/nucwaste/yucca/impactreport.pdf>

Planning for an Unpredictable Event: Vulnerability and Consequence Reassessment of Attacks on Spent Fuel Shipments (paper presented at WM 2005, the 32nd annual Waste Management Symposium, in Tucson, Arizona, on March 2, 2005)
http://www.state.nv.us/nucwaste/news2008/pdf/WM05_terrorism.pdf

Statements of Nevada Representatives at Various Public Hearings on the Draft EISs
<http://www.state.nv.us/nucwaste/news2007/pdf/halstead071115caliente.pdf>
<http://www.state.nv.us/nucwaste/news2007/pdf/halstead071119reno.pdf>
<http://www.state.nv.us/nucwaste/news2007/pdf/halstead071126amargosa.pdf>
<http://www.state.nv.us/nucwaste/news2007/pdf/nv071203rhalstead.pdf>
<http://www.state.nv.us/nucwaste/news2007/pdf/nv071203rloux.pdf>
<http://www.state.nv.us/nucwaste/news2007/pdf/nv071205jhall.pdf>

Yucca Mountain Transportation Implications for the State of California
<http://www.state.nv.us/nucwaste/news2007/pdf/nv070625caciepr.pdf>

Reconnecting to the Caliente Rail Route – Implications for the Las Vegas Valley, Presentation to Nevada Commission on Nuclear Projects, Las Vegas, Nevada, May 23, 2007
<http://www.state.nv.us/nucwaste/news2007/pdf/nv070523caliente.pdf>

The Effects of Human Reliability in the Transportation of Spent Nuclear Fuel (June 1988).
<http://nvlsn.nv.gov/documents/NEV0000043.PDF>

State of Nevada Socioeconomic Studies of Yucca Mountain 1986 - 1992: An Annotated Guide and Research Summary
<http://nvlsn.nv.gov:80/documents/NEV0000056.PDF>

State of Nevada Comments on O.C.R.W.M. From Reactor Spent Fuel Shipping Cask Preliminary Design Reports
<http://nvlsn.nv.gov/documents/NEV0000470.PDF>

Nothing Recedes Like Success? Risk Analysis and the Organizational Amplification of Risks", by William R. Freudenburg in the journal, *Issues in Health and Safety* (Winter 1992)

<http://www.state.nv.us/nucwaste/news2008/pdf/NothingRecedesSuccessRisk1992.pdf>

Full-Scale Cask Testing Revisited, Again, Paper presented at Waste Management '06 (February 27 -March 2, 2006)

<http://www.state.nv.us/nucwaste/news2006/pdf/wmo6casktesting.pdf>

Letter to Dale Klein, Chairman, U.S. Nuclear Regulatory Commission, Re: Spent Fuel "Aging Facility" At Yucca Mountain (August 8, 2004)

<http://www.state.nv.us/nucwaste/news2006/pdf/nv060818nrc.pdf>

Letter From Robert R. Loux to NRC Chairman Dale Klein Regarding Denial of Safety Credit for DOE's Use of "Drip Shields" in the Proposed Yucca Mountain Repository (April 19, 2007)

<http://www.state.nv.us/nucwaste/news2008/pdf/nv070419klein.pdf>

State of Nevada: Yucca Mountain Transportation Security Issues (Waste Management 2007)

<http://www.state.nv.us/nucwaste/news2007/pdf/wm07ymtrans.pdf>

State of Nevada: Any Way to Run A Railroad: Implications of Dedicated Trains (Waste Management 2006)

<http://www.state.nv.us/nucwaste/news2006/pdf/wm06railroad.pdf>

State of Nevada Comments on the NRC Draft Report on Spent Fuel Transportation Package Response to the Baltimore Tunnel Fire Scenario (NUREG/CR-6886/PNL-15313), December 30, 2005

<http://www.state.nv.us/nucwaste/news2005/pdf/nv051230nrc.pdf>

Nuclear Engineering International Magazine, "Railroading Nevada" (October 2005)

http://www.state.nv.us/nucwaste/news2005/pdf/nei05oct_caliente.pdf

State of Nevada Perspective on the Proposed Caliente Rail Corridor (October 13, 2005)

<http://www.state.nv.us/nucwaste/news2005/pdf/wieb051013.pdf>

State of Nevada: Hot Time in the City: Which Shipment Mode for High Level Nuclear Waste Affects Urban Areas Most (Waste Management 2005)

http://www.state.nv.us/nucwaste/news2005/wm/urban_impacts.pdf

State of Nevada: Integrating Hazards Assessment and Impact Assessment: The Case of the Caliente Rail Corridor to Yucca Mountain (Waste Management 2005)

http://www.state.nv.us/nucwaste/news2005/wm/caliente_rail.pdf

State of Nevada Views on the Proposed Caliente Rail Corridor (February 10, 2005)
<http://www.state.nv.us/nucwaste/news2005/pdf/nv050210halstead.pdf>

State of Nevada: Beyond the Mountains: Nuclear Waste Transportation and the Rediscovery of Nevada (Waste Management 2004)
<http://www.state.nv.us/nucwaste/news2004/pdf/wm0304.pdf>

State of Nevada: Presentation of Robert Halstead on Yucca Mountain Transportation Access Issues to the National Academy of Sciences Study Committee on Transportation of Radioactive Waste, July 25, 2003
http://www.state.nv.us/nucwaste/news2003/pdf/nas_halstead2.pdf

State of Nevada: Radiological Impacts of Incident-Free Transportation to Yucca Mountain: Collective and Maximally Exposed Individual Doses – Paper presented at the Health Physics Society Annual Meeting, June 2002
<http://www.state.nv.us/nucwaste/news2003/pdf/HPSPaper-FEISImpactsCritique6-20-02.pdf>

State of Nevada: Rail Access to Yucca Mountain: Critical Issues (Waste Management 2003)
<http://www.state.nv.us/nucwaste/news2003/pdf/nv030225d.pdf>

State of Nevada: Many Roads to Travel: Alternative Approaches to Route Selection for Yucca Mountain Shipments (Waste Management 2003)
<http://www.state.nv.us/nucwaste/news2003/pdf/nv030225e.pdf>

State of Nevada: How Many Did You Say? Historical and Projected Spent Nuclear Fuel Shipments in the United States (Waste Management 2003)
<http://www.state.nv.us/nucwaste/news2003/pdf/nv030225b.pdf>

State of Nevada: Testimony of Robert J. Halstead Before the Committee on Energy and Natural Resources, United States Senate, May 22, 2002
<http://www.state.nv.us/nucwaste/news2002/nn11705.pdf>

State of Nevada: Additional Comments to the NRC on Nevada's Petition for Rulemaking with Respect to Safeguards for Spent Fuel and HLW Shipments, January 1, 2000
<http://www.state.nv.us/nucwaste/news2000/nn10472.htm>

NRC: Rulemaking Petitions: Nevada, 49410-49413, September 13, 1999 [FR Doc. 99-23691]
<http://www.state.nv.us/nucwaste/news/fr13se99-30.htm>

State of Nevada: Petition to Institute Rulemaking and to Initiate a Comprehensive Assessment (June 22, 1999)
<http://www.state.nv.us/nucwaste/news/ag990622b.htm>

State of Nevada: Reported Incidents Involving Spent Nuclear Fuel Shipments 1949 to Present (May 1996)

<http://www.state.nv.us/nucwaste/trans/nucinc01.htm>

State of Nevada: An Independent Cost Assessment of the Nation's High-Level Nuclear Waste Program (February 1998)

<http://www.state.nv.us/nucwaste/trans/pic2/2piccovr.htm>