

# Lander County Board of Commissioners



December 11, 2006

010087

Dr. Jane Summerson  
EIS Document Manager  
OCRWM-U.S. DOE  
1551 Hillshire Drive, M/S 010  
Las Vegas, NV. 89134

Facsimile Transmission 1-800-967-0739

Re: Scoping Comments-Supplement to the Final Environmental Impact Statement

Dear Dr. Summerson:

Attached are Lander County's scoping comments for the Supplement to the 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, Nevada.

Based upon the review of the notice of intent and the Mina Rail alternative, Lander County views the Carlin rail alternative as a superior option to the Mina and Caliente routes. The Carlin rail route was designated as the preferred secondary alternative in the Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain. Any new environmental analysis addressing rail access should include this route because it avoids several Nevada communities adjacent to the rail line including Battle Mountain and as well as a less costly alternative to the Caliente route.

If you have any questions, concerning this letter or Lander County's scoping comments, please contact Ms. Deborah Teske at (775) 635-2860.

Sincerely,

A handwritten signature in black ink that reads "Brad Kelley".

Brad Kelley  
Vice-Chairman, Board of County Commissioners

**Notice of Intent to prepare a Supplement to the 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, Nevada and Rail Alignment Environmental Impact Statement  
Scoping Comments  
Lander County, Nevada**

**General Scoping Comments**

1. Northeast Nevada does not have a hazardous materials team capable of responding to accidents involving radioactive waste shipments. Such teams must come from Salt Lake City, Las Vegas or Reno. DOE needs to evaluate the potential impacts and the need for a hazardous materials team in this area.
2. DOE needs to examine the overall conditions of the Union Pacific Rail Line through Northern Nevada. There has been several accidents and derailments along this route. The EIS needs to discuss the adequacy of rail maintenance and facility standards.
3. DOE needs to examine the entire Mina Rail route in more detail than the national transportation route analysis contained in the Final Environmental Impact Statement for Yucca Mountain. The Mina route segment from Salt Lake City to Yucca Mountain has not been evaluated in terms of risk analysis, impacts on existing rail operations, potential areas for increased accidents and derailments, etc.
4. DOE needs to fully consider the potential social, economic and environmental impacts of rail operations along this corridor. Simply providing a radtran or other type of risk analysis is not sufficient for the corridor segment in Nevada.
5. The EIS needs to identify the specific generator sites that will access the Mina Rail alternative and identify the number of shipments entering the route from the west and from the east. DOE should also identify likely truck routes for non-rail shipments. There are a number of generator sites in the west that do not have direct rail access suggesting truck shipments are required. Also, the location of generator sites in the west could utilize more than one route to access Yucca Mountain rail spurs (Caliente and Mina). DOE needs to show the number of anticipated rail shipments traversing northern Nevada for both the Caliente route and the Mina Route.
6. The level of analysis in the EIS needs to recognize Nevada's unique role as the receiving jurisdiction. As a result, the issues evaluated and the level of analysis for the rail line in Nevada should be substantially greater than other areas of the country.
7. DOE needs to recognize that the majority of waste shipments to Yucca Mountain may now be entering the State in the north. For over 20 years, transportation elements of the Yucca Mountain program have been focused largely on southern

Nevada. DOE needs to refocus its resources, institutional interactions and support to northern Nevada. In the EIS, DOE needs to commit to regular interactions with communities along the rail corridor.

8. The period of analysis for the Mina Route should be expanded to consider a larger repository than currently envisioned (70,000 mtu), and larger potential shipment volumes associated with the increasing demand and expansion of nuclear power generation. Similarly the effects of recycling on shipment volumes should also be discussed in the EIS.

9. The EIS needs to contain a comparison between the Caliente Route and the Mina Route in terms of overall construction and maintenance/operation costs. Also, the EIS needs to describe the schedule for construction of both routes. The need for major improvements such as bridges and tunnels should be identified as well as major cuts to accommodate grade requirements of nuclear waste trains.

10. DOE needs to define and evaluate a worst-case accident location and scenario within the Mina Route Corridor.

11. The EIS needs to have a complete description of the emergency response capabilities throughout the Union Pacific route in northern Nevada. DOE needs to examine the ability to provide emergency medical services to accidents involving radiological materials. Hazardous materials response teams along the Mina Route in northern Nevada should be identified.

12. Spent fuel from the nation's nuclear weapons factories and other types of high-level nuclear waste could also be sent to Yucca Mountain. This might include irradiated fuel from the US Navy's nuclear submarines, irradiated fuel from production of plutonium for nuclear bombs, solidified or "vitrified" high-level waste, and spent fuel from foreign research reactors. What exactly would be sent to Yucca Mountain is not yet clear. The EIS should clarify the types of waste being shipped under past, present and future scenarios.

13. During storage in spent fuel pools at nuclear reactor sites, spent fuel becomes considerably less radioactive than it was at the time of removal from the core. However, even after a ten-year cool down period, spent nuclear fuel emits dangerous levels of gamma, beta and neutron radiation. After ten years of storage in a spent fuel pool, about one-half of the fission activity is generated by cesium-137. DOE needs to describe the age of fuel to be shipped and the potential for volatile cesium. The EIS needs to commit to a shipping schedule with the oldest waste moving first.

14. A study by the US Department of Energy's Pacific Northwest Laboratory measured 9.9% of the cesium created during reactor operation as present in the gap. In the event of an accident in which the fuel cladding and cask body or cask seal is breached, this volatile and mobile cesium will be available to be dispersed to the surrounding environment. The cesium would travel in whichever direction the wind

is blowing to contaminate areas surrounding the accident site. Cesium is a strong gamma emitter. Because of its long half-life, it will be hazardous for several hundred years. The EIS needs to discuss the potential impacts of volatile cesium. The EIS needs to describe the potential impacts of volatile cesium.

15. The amount of cesium in any one shipment will differ due to the type, age and amounts of fuel. Given this radionuclide's longevity, volatility and mobility it's presence in the fuel and in the fuel rod gap poses a concern.

16. Sometimes in reactor water there are metal chips or debris, for example from a rusted pipe. These can cause damage to the fuel cladding. Cladding can corrode and become embrittled. It can crack, pit and thin. Ironically, these problems may mean less volatile cesium available to be released during transit (because it's already been released either in the reactor or the spent fuel pool.). DOE needs to evaluate the potential for damage to fuel cladding and the impact it may have in the event of an accident.

17. If the fuel cladding has been weakened before encountering the possible shocks and vibrations expected during transit on the nation's highways and railroads, the potential for further fuel rod degradation is real. The integrity of the second barrier, the fuel rod barrier, is a cause for concern.

18. Fires that involve chemicals can rage for long periods and produce higher temperatures than a fire that involves diesel fuel alone. Battle Mountain and Lander County have a high number of chemical shipments. DOE needs to evaluate the potential for accidents with chemical shipments and the potential for higher temperature and long duration fires that could lead to a release.

19. In the incident-free-scenario the latent cancer fatality (LCF) is fairly low. The LCF, however, is considerable in the event of a severe accident. The EIS needs to provide estimates of latent cancer fatalities in the UP corridor in Northern Nevada from incident free and accident scenarios.

20. What operating parameters will be imposed on the railroad handling the transportation of nuclear waste? What limitations and requirements will be imposed regarding train operating speed, total timeframes for transport, dwell time in yards or on sidings, etc? What is the safety trade-off between using slower operating speeds (and having prolonged exposure times to radioactive materials) versus faster operating speeds (and shorter exposure times)? How will operating parameters imposed by the Department of Energy on the hauling railroad be monitored and enforced for compliance? What penalties will there be for non-compliance?

21. For any existing at-grade crossings not warranting grade separation, what at-grade crossing protection (signalization, signage, crossing panel improvements, driving surface improvements, striping, line-of-sight improvements) will be required and provided to enhance safety of local citizenry?

22. The document needs to address a detailed assessment of the existing track and identify where modifications will need to be made for the track to meet FRA criteria for the required FRA track Class and running speed; and where each type of modification needs to be made.

23. With an increased demand for nuclear power both in the United State and abroad, DOE needs to analyze the potential impact from new reactors and the potential change in the quantity of shipments that may occur as a result.

24. The Carlin rail route remains DOE's preferred secondary rail alternative. Any new environmental analysis addressing rail access should include this route because it avoids several Nevada communities adjacent to the rail line and it avoids rapidly growing areas in western Nevada. Lander County prepared several reports on the potential impacts and costs associated with this route. The Carlin Route provides a reasonable cost alternative to Mina and Caliente. The no action alternative needs to include the Carlin Route as a potential alternative.

25. Transportation resources, routing, and related discussions have focused on southern Nevada and not northern Nevada. It now appears that the majority of waste shipments (truck and rail) to Yucca Mountain may travel on routes principally in northern Nevada. The EIS needs to thoroughly examine the combination of rail and truck scenarios that will be affecting Lander County and northern Nevada.

### **Lander County Specific Comments**

26. Lander County has a substantial amount of data related to existing conditions within the Corridor. The County also maintains GIS for most areas of the County. DOE is encouraged to contact our Yucca Mountain staff representatives and the Planning Department to evaluate available information.

27. DOE needs to examine the potential for flooding in the Battle Mountain area and the potential to impact rail operations. The Battle Mountain area is at the confluence of the Reese River and the Humboldt River. The area has been subject to significant flooding events in the past. The corridor to the east of Battle Mountain is also subject to flooding and track washout.

28. DOE needs to evaluate cumulative impacts that could be associated with future radioactive and non-radioactive waste shipments. There are existing hazardous waste shipments both rail and non-rail affecting the Battle Mountain area. DOE needs to consider these for the purposes of risk analysis.

29. The railroad crossings in the Battle Mountain area vary in condition, with several in need of repair. There is subsidence of the track bed in some of the older crossings. This is a common condition due to the difficulty of maintaining the area under the crossing panel. DOE should evaluate rail crossings for shipment safety and the potential for derailment.

30. Understanding that regular freight is currently being transported on the existing Union Pacific Line, what restrictions, if any, will be imposed on commercial uses of the track during the approximately 24 year period when radioactive materials shipments are envisioned? What assurances can be provided to local industries that their regular rail shipments will not be delayed if trains carrying radioactive waste are given priority or are guaranteed expedited service? We are looking for assurance that current and future local industries' levels of rail service are not sacrificed because the corridor is shared by trains carrying radioactive waste. Future new industrial development off of the UP line in Lander County will require addition of new main line turnouts and we have concern that there will be a reluctance by the railroad to take on additional industrial switching, as it will become more critical than ever to reduce any more rail traffic on the mainline for switching moves.

31. Data survey of available information from UPRR indicates that there are areas where significant switching operations occur in the Battle Mountain area. The switching activity is due mainly to loading and unloading of materials for the industrial uses along the lines. DOE needs to examine the potential impacts of switching movements on nuclear waste trains in Battle Mountain.

32. In the Battle Mountain area there are signs of deterioration of trackbed due to vehicular traffic. DOE needs to evaluate the conditions of the rail line in the area.

33. Much of the rail corridor in Lander County is located in or adjacent to the 100 year floodplain. DOE needs to evaluate the potential for floods and train interruptions on the UP. DOE needs to describe how they will handle nuclear waste trains during periods of service interruption.

34. Baseline conditions of the rail corridor are described in the Lander County Rail Assessment November 2006. A report can be provided upon request. Similarly Lander County has developed a baseline report existing social and economic conditions.

35. The no-action alternatives needs to describe how western generator sites will ship to Yucca Mountain and disclose potential impacts to the highway routes. DOE should not simply fall back to the I-15 corridor through Las Vegas to access Yucca Mountain particularly when such a route is not the shortest and safest route to Yucca Mountain for many western generator sites.

36. DOE needs to describe how many rail shipments will occur on the northern Union Pacific under the Caliente option (shipments from west to east). Although certain routing options may not be completely known at this time, an estimate of shipments should be made in the EIS.

37. The EIS needs to disclose the potential impacts to hydrologic resources along the rail route in northern Nevada. The EIS should disclose the probability of an accident and the potential for release and the impact it might have on water resources.

Potential mitigation and responsibility of clean-up should be identified. There are several areas in northern Nevada where the rail corridor is adjacent to the Humboldt River. DOE should describe the possible consequences from an accident and release of radioactive material into the Humboldt River.

38. DOE needs to evaluate the fiscal impacts to local emergency response agencies. In Lander County, the County Sheriff's Department will likely be the first responder. Lander County incurred substantial costs associated with foreign reactor shipments from San Francisco to INEEL.

39. Some areas of the Battle Mountain Corridor are planned for future commercial / industrial development that are not presently developed but will be under development during the time period the route would be used for radioactive material transport. In DOE's assessment of impacts and mitigations, we want to make sure that these planned/soon-to-be-developed areas are given consideration even though they are not developed already at the time the EIS investigation is done.

40. The National Academy of Sciences released a report entitled, *Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States* (2006) Nuclear and Radiation Studies Board. The report made several recommendations regarding nuclear waste transportation. Relevant recommendations include:

**40a. RECOMMENDATION: An independent examination of the security of spent fuel and high-level waste transportation should be carried out prior to the commencement of large-quantity shipments to a federal repository or to interim storage. This examination should provide an integrated evaluation of the threat environment, the response of packages to credible malevolent acts, and operational security requirements for protecting spent fuel and high-level waste while in transport. This examination should be carried out by a technically knowledgeable group that is independent of the government and free from institutional and financial conflicts of interest. This group should be given full access to the necessary classified documents and Safeguards information to carry out this task.**

*DOE needs to evaluate the security of waste shipments in the EIS. General details and requirements should be identified. Although specific security details should not be released, DOE should commit to this type of study as a condition of the EIS process.*

**40b. RECOMMENDATION: Transportation planners and managers should undertake detailed surveys of transportation routes to identify potential hazards that could lead to or exacerbate extreme accidents involving very long duration, fully engulfing fires. Planners and managers should also take steps to avoid or mitigate such hazards before the commencement of shipments or shipping campaigns.**

*Such conditions exist in the Battle Mountain area and should be examined in the EIS.*

**40c. RECOMMENDATION:** Transportation implementers should take early and proactive steps to establish formal mechanisms for gathering high-quality and diverse advice about social risks and their management on an ongoing basis. The committee makes two recommendations for the establishment of such mechanisms for the Department of Energy's program to transport spent fuel and high-level waste to a federal repository at Yucca Mountain: (1) expand the membership and scope of an existing advisory group (Transportation External Coordination Working Group) to obtain outside advice on social risk, including impacts and management; and (2) establish a *transportation risk advisory group* that is explicitly designed to provide advice on characterizing, communicating, and mitigating the social, security, and health and safety risks that arise from the transportation of spent fuel and high-level waste to a federal repository or interim storage. This group should be comprised of risk experts and practitioners drawn from the relevant technical and social science disciplines and should be convened under the Federal Advisory Committee Act or a similar arrangement to enhance the openness of its operations. Its members should receive security clearances to facilitate access to appropriate transportation security information. The existing federal Nuclear Waste Technical Review Board, which will cease operations no later than one year after the Department of Energy begins disposal of spent fuel or high-level waste in a repository, could be broadened to serve this function.

*As part of the EIS, DOE needs to commit to this type of process and be willing to implement recommendations prior to construction and operations of a rail line. Social risks and their potential impacts should be disclosed in the EIS.*

**40d. RECOMMENDATION:** The Nuclear Regulatory Commission should build on recent progress in understanding package performance in very long duration fires. To this end, the agency should undertake additional analyses of very long duration fire scenarios that bound expected real-world accident conditions for a representative set of package designs that are likely to be used in future large-quantity shipping programs. The objectives of these analyses should be to

- Understand the performance of package barriers (spent fuel cladding and package seals);
- Estimate the potential quantities and consequences of any releases of radioactive material; and
- Examine the need for regulatory changes (e.g., package testing requirements) or operational changes (e.g., restrictions on trains carrying spent fuel) either to help prevent accidents that could lead to such fire conditions or to mitigate their consequences.



**Strong consideration should also be given to performing well-instrumented tests for improving and validating the computer models used for carrying out these analyses, perhaps as part of the full-scale test planned by the Nuclear Regulatory Commission for its package performance study.**

**Based on the results of these investigations, the Commission should implement operational controls and restrictions on spent fuel and high-level waste shipments as necessary to reduce the chances that such fire conditions might be encountered in service. Such effective steps might include, for example, additional operational restrictions on trains carrying spent fuel and high-level waste to prevent co-location with trains carrying flammable materials in tunnels, in rail yards, and on sidings.**

*DOE needs to commit to findings and recommendations of this type of analysis as part of this EIS.*

**40e. RECOMMENDATION: Full-scale package testing should continue to be used as part of integrated analytical, computer simulation, scale-model, and testing programs to validate package performance.**

*In the EIS DOE should commit to full-scale cask testing.*

**40f. RECOMMENDATION: The Department of Energy should continue to ensure the systematic, effective involvement of states and tribal governments in its decisions involving routing and scheduling of foreign and DOE research reactor spent fuel shipments.**

*DOE needs to fully describe the efforts to involve states and tribal governments in its decisions involving routing and scheduling. DOE needs to make a strong commitment to those efforts in the EIS.*

**40g. RECOMMENDATION: DOE should fully implement its mostly rail decision by completing construction of the Nevada rail spur, obtaining the needed rail packages and conveyances, and working with commercial spent fuel owners to ensure that facilities are available at plants to support this option. These steps should be completed before DOE commences the large-quantity shipment of spent fuel and high-level waste to a federal repository to avoid the need to procure infrastructure and construct facilities to support an extended truck transportation program. DOE should also examine the feasibility of further reducing its needs for cross-country truck shipments of spent fuel through the expanded use of intermodal transportation (i.e., combining heavy-haul truck, legal-weight truck, and barge) to allow the shipment of rail packages from plants that do not have direct rail access.**

*For comparative purposes, the EIS should look at an intermodal facility for the Mina and Caliente routes and disclose the potential transportation impacts.*

**40h. RECOMMENDATION:** DOE should identify and make public its suite of preferred highway and rail routes for transporting spent fuel and high-level waste to a federal repository as soon as practicable to support state, tribal, and local planning, especially for emergency responder preparedness. DOE should follow the practices of its foreign research reactor spent fuel transport program of involving states and tribes in these route selections to obtain access to their familiarity with accident rates, traffic and road conditions, and emergency responder preparedness within their jurisdictions. Involvement by states and tribes may improve the public acceptability of route selections and may reduce conflicts that can lead to program delays.

*DOE needs to provide a more complete description of highway routes if the mostly rail scenario is selected. The EIS should contain this information. It is not sufficient to merely rely upon the interstate highway system. With respect to foreign reactor shipments, DOE primarily relied upon local government participation and not tribal and state. The same should be assumed with Yucca Mountain shipments and local governments should be considered the primary point of contact..*

**40i. RECOMMENDATION:** DOE should fully implement its dedicated train decision before commencing the large-quantity shipment of spent fuel and high-level waste to a federal repository to avoid the need for a stopgap shipping program using general trains.

**40j. RECOMMENDATION:** DOE should negotiate with commercial spent fuel owners to ship older fuel first to a federal repository or federal interim storage, except in cases (if any) where spent fuel storage risks at specific plants dictate the need for more immediate shipments of younger fuel. Should these negotiations prove to be ineffective, Congress should consider legislative remedies. Within the context of its current contracts with commercial spent fuel owners, DOE should initiate transport through a pilot program involving relatively short, logistically simple movements of older fuel from closed reactors to demonstrate the ability to carry out its responsibilities in a safe and operationally effective manner. DOE should use the lessons learned from this pilot activity to initiate its full-scale transportation program from operating reactors.

*DOE needs to include a discussion of fuel age and shipping schedule in the EIS. DOE should analyze the potential differences in safety between shipping older fuel first and some other alternative.*

**40k. RECOMMENDATION:** DOE should begin immediately to execute its emergency responder preparedness responsibilities defined in Section 180(c) of the Nuclear Waste Policy Act. In carrying out these responsibilities, DOE should proceed to (1) establish a cadre of professionals from the emergency responder community who have training and comprehension of emergency response to spent fuel and high-level waste transportation accidents and incidents; (2) work with the Department of Homeland Security to provide consolidated "all-hazards" training

**materials and programs for first responders that build on the existing national emergency response platform; (3) include trained emergency responders on the escort teams that accompany spent fuel and high-level waste shipments; and (4) use emergency responder preparedness programs as an outreach mechanism to communicate broadly about plans and programs for transporting spent fuel and high-level waste to a federal repository with communities along planned shipping routes.**

*The EIS needs to describe how DOE will undertake the implementation of 180(c).*



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**To:** Dr. Jane Summerson **Fax:** (800) 967-0739

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**From:** Deborah Teske **Date:** December 11, 2006

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**Re:** Scoping Comments **Pages:** 12 including this page

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**Phone:** (702) 794-1368

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Urgent     For Review     Please Comment     Please Reply     Please Distribute

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Following please find Lander County's Scoping Comments for the Supplement to the Final Environmental Impact Statement. The original has been mailed today.

Should you have any questions please feel free to contact me at (775) 635-2860.

Thank you.

