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White Pine County
Board of County Commissioners

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October 10, 2001

Ms. Carol Hanlon
U.S. Department of Energy
Yucca Mountain Site Characterization Office
(M/S #025)
P.O. Box 30307
North Las Vegas, Nevada 89306-0307

RE: Comments On Possible Site Recommendation for Yucca Mountain

Dear Ms. Hanlon:

The Board of White Pine County Commissioners submits these comments on the possible recommendation of Yucca Mountain as this nation's first deep-geologic repository for spent nuclear fuel and other high-level radioactive waste. My fellow Commissioners and I have a fiduciary responsibility to protect the public health, safety, and well-being of residents and visitors to White Pine County. As one of ten local governments designated by the Secretary of Energy as potentially "affected" by the Yucca Mountain project, White Pine County also has a responsibility to provide these comments and recommendations to the Department of Energy. The White Pine County Board of Commissioners expects the Secretary of Energy to fully consider this letter before deciding whether, and under what conditions, to recommend the Yucca Mountain site as a geologic repository.

At the outset, let me note that White Pine County does not believe that a decision by the Secretary of Energy to recommend the Yucca Mountain site as a geologic repository is in the best interest of Nevada and its residents. Unfortunately, the suitability guidelines under which a determination by the Secretary to recommend the site will be made do not require the Secretary to consider the implications of the repository system upon the social, economic and environmental fabric which defines this place I call home. Consideration of these factors, in addition to the suitability guidelines, is within the discretion of the Secretary of Energy.

In deciding whether to recommend the Yucca Mountain site to the President, White Pine County requests that the Secretary of Energy consider not only the suitability of the site under siting guidelines proposed at 10 CFR Parts 960 and 963, but also the impacts of the development and operation of the repository upon the residents, economy, and environment of Nevada. The County further recommends that the Secretary of Energy

consider whether identified impacts can be sufficiently mitigated so as to ensure maintenance of the quality of life enjoyed by White Pine County residents. If development and operation of the repository system will diminish our quality of life, then the Secretary of Energy should not recommend the Yucca Mountain site to the President.

There are unique local conditions and resultant impacts specific to White Pine County, Nevada, which we believe require full consideration as an integral part of any decision to recommend Yucca Mountain as a safe and enduring repository. As a consequence, White Pine County has prepared a comprehensive impact report which has been submitted directly to the Secretary of Energy. The Secretary, in formulating a recommendation to the President, should consider White Pine County's impact report. In addition, White Pine County expects the Secretary of Energy to submit its impact report, pursuant to Section 114(a)(1)(G) of the Act, to the President. We understand that other affected units of local government and the State of Nevada are preparing impact reports, all of which should be considered by the Secretary of Energy in determining whether to recommend the Yucca Mountain site.

White Pine County believes that the Secretary of Energy must also consider the Final Environmental Impact Statement for the Yucca Mountain site when deciding whether to recommend the site to the President. To date, Department of Energy staff has suggested that release of the Final Environmental Impact Statement would occur concurrently with the site recommendation. This would suggest that the Secretary of Energy may not be able to consider the contents of the Final EIS when making a decision on whether to recommend the site. White Pine County recommends that the Secretary defer any decision to recommend the site until at least 30 days following public release of the Final EIS.

With regard to the technical basis upon which the Secretary may formulate a recommendation, White Pine County is concerned about the DOE's use of proposed rather than existing siting guidelines in preparing the preliminary site suitability evaluation. In essence, the DOE has determined that the Yucca Mountain site is suitable for recommendation by applying a set of guidelines which are not found in federal regulation. The DOE has not provided an assessment of the suitability of the Yucca Mountain site against existing siting guidelines found at 10 CFR 960 and 963. As a consequence, DOE does not know whether the Yucca Mountain site is suitable for recommendation under existing siting guidelines. Either DOE should promulgate final revised siting guidelines at 10 CFR 960 and 963 in advance of any recommendation by the Secretary or the Department should prepare a evaluation of the suitability of the site relative to existing siting guidelines. If the site cannot be shown to be suitable under existing guidelines, the Secretary should not recommend the site to the President.

In reviewing documentation intended to support a Secretarial decision whether to recommend the Yucca Mountain site to the President, we note the Draft Environmental Impact Statement Yucca Mountain was not considered in evaluating the preliminary suitability of the site. There are many facets of the biosphere and near field environment, including demographic and socioeconomic conditions, which might bear upon various

assumptions utilized in the evaluation of system performance. A final determination about the suitability of the site should be made only after all relevant assumptions are verified against information contained with the Final Environmental Impact Statement for the Yucca Mountain project.

White Pine County remains very concerned about the Department of Energy's focus upon groundwater as the most likely exposure pathway. As a consequence, atmospheric routes for exposure are not given nearly the level of analysis in supporting documents. Conclusions regarding preliminary site suitability appear to be largely based upon extensive assessment of groundwater contamination. The County is concerned that uncertainties associated with atmospheric pathways have not been sufficiently narrowed. Without further analysis of atmospheric pathways, the level of risk associated with the repository system cannot be judged to be acceptable. Further work by the Department to better understand probabilities and consequences (including cumulative dose) of exposure from atmospheric pathways must be undertaken prior to formulation of a site recommendation.

Supporting documents suggest that design of the repository system is not complete. A final site suitability evaluation should be conducted only after the design of the facility has been completed. Absent final design, there is no guarantee that the repository will perform in a manner consistent with preliminary evaluations. It is not clear to what extent the final design will vary from the design basis used in preliminary evaluations of site suitability. Supporting documents do not reveal the extent of uncertainty associated with lack of a final design. Any decision to recommend the Yucca Mountain site should be reserved until a final design for the facility is available and suitability evaluation for said design completed.

Table 1 and Table 2 of the Yucca Mountain Preliminary Site Suitability Evaluation suggests that for most all applicable existing and proposed EPA and NRC standards, the Yucca Mountain site meets dose limits. Tables 1 and 2 do not however indicate the range of dose estimates associated with uncertainty. Depending upon the level of uncertainty, doses for some standards may actually exceed relevant EPA or NRC standards. A decision by the Secretary to recommend the Yucca Mountain site must consider the range of dose estimate uncertainty and such range of estimates must be included in any written documentation supporting a recommendation. Should the range of dose estimates for any parameter exceed the relevant EPA or NRC standard, the Yucca Mountain site should not be recommended to the President for licensure.

White Pine County is concerned that DOE has not considered the consequences of a volcanic dike intrusion of the repository horizon during the preclusive phase of the project. Probabilistic studies described within DOE supporting documents suggest that there is one chance in 6,250 of a dike intrusion during the "first" 10,000 years. Such an event then could occur within the first 300 years of repository operations. Within this timeframe, the activity level associated with wastes emplaced in the repository would be much greater than following closure. With higher activity levels, the consequences of a volcanic dike intrusion of the repository could be significantly greater during preclusive.

Prior to making a recommendation, the Secretary should evaluate the risk and consequences of a volcanic dike intrusion of the repository during the preclusive phase.

More generally, uncertainty must be given central focus in any recommendation of the site made by the Secretary. It is incumbent upon the Secretary to disclose the level of uncertainty associated with estimates of repository system performance (including transportation risk) and the relationship of said uncertainty to exposure risk estimates. Of concern to White Pine County is documentation within the Preliminary Site Suitability Evaluation which indicates that analysis of uncertainty associated with consideration of volcanism resulted in an increase of dose estimates. Only through such a disclosure regarding levels of uncertainty will the President, the Congress, and the public know the degree of risk associated with the project.

The Secretary should consider whether the level of risk associated with the repository system (including transportation) is greater or less than that associated with current waste management practices. Any recommendation by the Secretary regarding the Yucca Mountain repository system should include a definitive statement providing a quantitative comparison of the total of deaths associated with continuation of current on-site management of waste and with the repository system. Such estimate of fatalities should consider death from exposure to radionuclides and death from system operational accidents (including transportation accidents). Only with the provision of such a comparative statement of risk will the President, the Congress and the public know with any certainty whether the proposed Yucca Mountain repository system results in a net public health and safety benefit to the Nation. If the repository system does not provide such net benefit, the Yucca Mountain site should not be recommended to the President.

In considering whether to recommend the Yucca Mountain site, the Secretary should consider how changes in technology may alter estimates of exposure risk contained in supporting documentation. For example, the Department of Energy's current analysis of human intrusion suggests that drilling technology would remain constant; hence "the drilling assembly would buckle and bend when the bit attempts to penetrate the titanium drip shield and waste package". The analysis does not consider development of new drilling technology which might not afford the early warning (buckle and bend of the bit) assumed in current evaluations of risk.

DOE's site recommendation supporting documents do not address whether drifts and ventilation shafts will act as conduits for igneous materials. If not considered, this possibility may represent a pathway for rapid intrusion of igneous material and a resultant intersection with far greater numbers waste canisters impacted than may have been previously considered. An assessment of the extent to which ventilation shafts and drifts may heighten the extent of igneous material coming in contact with waste packages must be considered by the Secretary prior to reaching any conclusions regarding the licenseability of the Yucca Mountain site.

Prior to making a site recommendation, the Secretary should also consider the extent to which a volcanic dike intrusion of the repository could serve to impede the effectiveness

of ventilation shafts and repository cooling. The potential for steam production related to volcanism and the Secretary when formulating a recommendation should also take related gaseous releases from the repository into account.

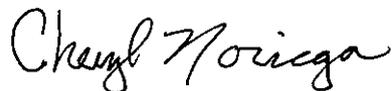
It appears as though the estimation of exposure and related health consequences for the critical group from the atmospheric dispersion of volcanic ash and radioactive materials does not take into consideration the cumulative health effects from prior exposures (ie. above-ground weapons testing). Indeed, the critical group assumed by DOE (apparently to the southwest of the site) may not represent the critical group as far as volcanism is concerned. Consideration by the Secretary should be given to evaluating the consequences of volcanic eruption upon residents of White Pine County (a location where significant deposition of radionuclides from above-ground weapons testing has occurred).

It appears as though the Department of Energy is fitting its site suitability guidelines to the Yucca Mountain site. This appearance is supported by the Department's failure to promulgate revised guidelines until after completion of the preliminary site suitability evaluation against the proposed new guidelines. As a consequence, the public is left with the distinct impression that the site may not have been able to comply with existing suitability guidelines. White Pine County shares this concern. It is recommended that the Secretary require an evaluation of the Yucca Mountain site against existing suitability guidelines at 10 CFR 963. Any recommendation by the Secretary should include an assessment of the public health and safety benefit of the new suitability guidelines. If the new guidelines are simply "site fitting", the Secretary should so disclose said fact.

White Pine County is concerned that the Secretary may make a recommendation based upon "preliminary" evaluations of the suitability of the Yucca Mountain site. Presumably, DOE intends to develop a more refined and/or complete assessment of the site prior to submission of a license application to the NRC. The Secretary is encouraged to refrain from making a site recommendation based upon a preliminary suitability evaluation, withholding such decision until such time as a more refined and/or complete evaluation has been completed. White Pine County believes that a more robust evaluation of the site would address the issues raised within this comment letter.

Let me close by restating White Pine County's contention that a recommendation by the Secretary of Energy to seek a license to construct and operate a deep-geologic repository for spent nuclear fuel and other high-level radioactive waste is not in the best interest of the County. DOE has not done nearly enough work to consider the extent of and ways to effectively mitigate the consequences of transporting radioactive waste through White Pine County. Until such time as the consequences of transportation are fully known and DOE has designated the shipping mode and route(s), a recommendation to proceed with licensing of the repository is premature. This would appear to be the case, particularly given NRC's comments on the DEIS which encourage DOE to identify a preferred mode and route(s) in the Final EIS.

Respectfully Submitted,



Cheryl Noriega
Chairman

Cc:
Governor Guinn, State of Nevada
Nevada Congressional Delegation
Nevada Agency for Nuclear Projects
AULG's
City of Ely