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Dr. Jane Summerson, EIS Document Manager  
Regulatory Authority Office  
Office of Civilian Radioactive Waste Management  
US Department of Energy  
1551 Hillshire Drive, M/S 010  
Las Vegas, NV 89134

Re: Scoping for an SEIS on Yucca Mountain Project (YMP) Redesigns

Dear Dr. Summerson:

These comments are in regard to public scoping for a supplement to the Final Environmental Impact Statement (EIS) for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nevada.

Your NOI, published October 13, 2006, includes a proposed action to completely redesign the Yucca Mountain repository program. The proposed SEIS would address waste handling facilities, waste disposal, and repository performance.

DOE released a second NOI that same day that announced the intention to consider an alternate rail line option through Nevada, dubbed the "Mina corridor."

The changes proposed in these two NOIs indicate a profound change in direction for the Yucca Mountain Project, a change that we regard as a dangerous new path.

Under the proposed action, more than 90% of the commercial spent nuclear fuel to be packaged at the commercial sites in transportation, aging and disposal" (TAD) canisters, and all DOE high-level waste to be packaged in disposable canisters at DOE sites. A similar concept using a multipurpose canister (MPC) was proposed in 1995 but was quickly cancelled due to its impracticality and high cost. This seemingly small change would spur a significant change in the entire repository design, including how waste is handled at reactor sites, transported across the country, received and handled at Yucca Mountain, and how it would be disposed of in the mountain.

### A new EIS is needed.

With such significant changes, DOE must do the work of an entire new EIS. A supplement to an old EIS on an old project design cannot begin to cover the issues

that are at play. A new EIS is needed to reassess the potential environmental and public health impacts associated with a redesigned YMP.

Instead of taking this necessary step, DOE has once again completely understated and downplayed the significance of these changes. Your NOI goes so far as to state that you believe the redesign would have no different environmental effects other than those described in the original EIS. This claim beties reality. Full public participation should highlight some of the shortcomings of such a bald assumption.

### Aging pads constitute an illegal interim storage.

A major aspect of the proposed action involves the creation of "aging pads" to allow nuclear waste to cool on-site at Yucca Mountain until ready to be disposed of deep in the repository. DOE is apparently attempting to create an interim storage facility at Yucca Mountain, which is illegal under the Nuclear Waste Policy Act (NWPA).

### Yucca Mountain is still unsafe.

#### **Geologic barriers are insufficient.**

There is strong evidence of several kinds that show that Yucca Mountain is unsuitable to be a repository. The Institute of Energy and Environmental Research (IEER) has published their conclusion that Yucca Mountain is unsuitable.<sup>1</sup> Their conclusion is based on evidence that clearly shows that the YMP (and for that matter the proposed action) will rely almost solely on engineered barriers for the isolation of dangerous radionuclides.

Dependence on engineered barriers contradicts the entire premise of the NWPA which requires that a repository offer on a stable geologic barrier. Engineered barriers pose a significant health risk to Nevadans and our environment. Surprisingly, IEER's analysis is based upon DOE's own assessments. The fact that DOE has continuously ignored their own information is shocking and insulting.

The most recent engineered barrier to be added to the YMP is a system of water shields to be placed over the storage casks. This presents a fundamental problem in itself. Yucca Mountain, or whatever site selected for long term storage, was supposed to offer a stable geologic barrier to protect people and the environment from high level nuclear waste. Instead, you are designing engineering barriers to provide the required protection. Why can't these engineering barriers be built at the point of origin of the waste? Why does the nuclear waste have to be transported thousands of miles, contaminating handling materials and jeopardizing health and safety all along the transportation routes? One of the alternatives considered should be engineered barriers on site where the waste is generated.

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<sup>1</sup> Institute for Energy and Environmental Research, "Some Evidence of Yucca Mountain's Unsuitability as a Repository," [http://www.ieer.org/sdfiles/vol\\_7/7-3/yucca.html](http://www.ieer.org/sdfiles/vol_7/7-3/yucca.html)

## **Hydrologic evidence shows that the site is unsafe.**

The Department of Energy (DOE) has in its possession data and evidence of two disqualifying conditions, both in reference to hydrologic considerations, on the suitability of the Yucca Mountain site. The DOE has not proven that the site is safe as a long-term geologic repository for the disposal of nuclear and radioactive waste. Therefore, Yucca Mountain should be disqualified for consideration as a disposal site.

The EIS must include an accurate and complete description of the current system of groundwater flow in the Death Valley region. We must understand the hydraulic relationships between the deep carbonate aquifer and the volcanic units that overlie it, and the alluvial units beneath it and down gradient of it. We need more than a single well test to define the transmissivity of this regional geological unit.

The EIS must include an accurate description of the hydraulic character and sorptive capability for radionuclides in the alluvial units in Forty Mile Wash based on actual field data.

The DOE must perform more hydraulic analysis of units in the vicinity of the repository footprint and down gradient based on multiple well draw-down tests with a pumping well and a monitor well, in order to understand the apparent hydraulic conductivity values.

## **Describe radionuclide contamination.**

The new EIS must carefully look at the length of time in which radionuclide contamination can be expected to reach the site. There is a sizeable amount of data from the Nevada Test Site (NTS) testing program. The Underground Test Area (UGTA) project has not established with credibility and acceptability the length of time in which radionuclide contamination would reach the repository during its active life. DOE's Tritium Transport Modeling (1997) on Pahute Mesa gave a range of arrival times for tritium to reach the Oasis Valley area from the present date to as little as 40 years from now. Possibly with the collection of more data from the data sparse area between Yucca Mountain and Pahute Mesa, the DOE UGTA program will more confidently establish tritium transport times and pathways beneath Yucca Mountain.

The new EIS must determine whether, where and how much radioactive contamination attributable to underground tests has occurred. Unless there has been a monitoring system built in the last few years, there is no state of the art monitoring system on or off the NTS. It is highly likely that underground test contamination is past the NTS boundary, because that is exactly what personnel from the DOE UGTA program said at a Community Advisory Board meeting in Las Vegas almost ten years ago in June 1996. The phenomenon of prompt injection has probably blown the radionuclides past the NTS boundary, in a manner similar to the way it probably blew europium 0.8 miles at Benham with a colloidal boost. The YMP could fund a well program to prove or disprove that contamination is past the NTS boundary.

**A superfund site on a superfund site is incredibly dangerous.**

The new EIS needs to address the impact of siting a federal CERCLA type (Superfund) site (Yucca Mountain) down gradient of an existing Superfund site (the NTS, particularly Pahute Mesa).

The NTS Federal Facility Agreement and Consent Order (FFACO, 1996) was negotiated and signed to be a CERCLA-like cleanup agreement for the NTS. Although the NTS more than qualifies as a CERCLA site, it was deliberately not put on the national priority list (NPL) CERCLA program. This DEIS should do an analysis of this federal action as it pertains to the cumulative impact of the repository program because it too someday will be a CERCLA site. The Yucca Mountain repository is basically a very sophisticated and highly engineered form of underground injection of waste. It too will qualify for the NPL at some time in the future, 1000 years from now, or 10,000 years from now.

DOE modeling certainly shows that the Yucca Mountain repository will contaminate at least one square mile of the subsurface and eventually the groundwater system beneath and down gradient of the repository. What is the cumulative impact of siting one Superfund site down gradient of an existing Superfund site?

**A system to retrieving the rods is untested.**

There has still been no field testing of the system for retrieving the rods, should that become necessary in the future. How can we place confidence in a project that claims retrieval of the rods would take a minimum of 25 years? If, for some reason, the computer-generated models of Yucca Mountain's safety were wrong and the rods had to be retrieved, what would happen in those 25 intervening years? Would the federal government re-locate all affected residents to a safe area? Buy their properties? Assure economic viability despite relocation?

**Dose calculations must be made carefully.**

Dose calculations must account for the additive, multiplicative and synergistic relationships of radiological and other biologically hazardous pollutants, factors and conditions that ultimately will affect recipients.

**Failures to control radioactivity must be considered.**

In cost-benefit analyses, the DEIS fails to include all the costs to the affected populations and to the environment due to potential failures of control. If control is not maintained, how would people and the environment be affected?

**Earthquake risk.**

None of us who live here in Las Vegas believe that the calculated risk due to earthquake and seismic activity is insignificant. In October 1999 an earthquake awakened all of us in our beds. There is a theory being investigated by scientists that predicts earthquakes as large as 7.0 or 8.0 on the Richter scale that could be located

as near as 20 miles from Yucca Mountain. The siting of Yucca Mountain is being called into question more vigorously every day. How can we be confident that the DOE knows what types of seismic and volcanic activity may occur in the next 10,000 years?

**Consider global warming.**

The new EIS must include an assessment of the potential impacts of global warming and other future climate change relating to both air and water pathways of radiation releases into the biosphere. You cannot possibly assume that there are no significant impacts in these areas, especially when the repository is to have at least a 10,000-year life.

**Carefully and accurately consider calculated and perceived risk.**

The previous EIS documents found that all the calculated risks are statistically insignificant, and thus do not require mitigation or compensation. This raises questions about the scientific validity of the YM Project. This frankly is unbelievable. How can there be no major impacts to people or to the environment when a project of this scope and magnitude has never been attempted before?

Calculated risk must include all risk factors, and must consider all known and probable impacts to quality of life, the health of citizens and the natural environment, and the economic viability of the region.

Risk assessments should include the degree of uncertainty in the calculations. If this information is absent again from the documentation, it calls into question the validity of the data and the conclusions drawn from them.

Accurate population estimates must be used. In the past, population numbers were grossly underestimated. The calculated risk and exposure will be gravely larger with an accurate estimate of the Valley's population.

Calculated health risks must consider more than just latent cancer fatalities. There must be an assessment of ill health or radioactive sicknesses that could occur from releases into the air, water, or soil. There must be a description and an assessment of low-dose effects for the most sensitive and vulnerable members of a population (for example, for the embryo, fetus, pregnant woman, rapidly growing young child, the aged, those with previously impaired health).

Perceived risk must be included in the analysis. Human behavior is not governed by science and rationality. There is a large factor of perceived risk that does and will have a real and significant impact on the economic viability of the region. You must provide analysis of perceived risks and the consequent stigma surrounding the quality of life for humans, ecosystems, and the region's economy.

**Estimate and describe emergency action plans and increased government services.**

Emergency action plans need to be developed at Yucca Mountain. An accident not only can but will occur at some time, some where. The EIS needs to consider the

~~sources needed to do these plans, and the impacts the implementation of these plans would have on the environment.~~

~~There will be an increase in government services required at and around Yucca Mountain. For example, there will be an increased need for government inspectors and law enforcement from several different organizations; increased law enforcement, etc. etc. The EIS needs to consider the needs of these organizations and how they will affect the environment.~~

~~Protect the environment for its own sake.~~

~~The new EIS must provide for the protection of all components of the biosphere (that is, the protection of the environment for its own sake).~~

## Alternatives

~~Provide reasonable no-action alternatives.~~

~~In the past EIS documents, the no-action alternatives have been unreasonable, even impossible alternatives. You have made outlandish scenario assumptions, thus making the proposed action seem like not only the best but the only course of action. A 10,000-year facility with long-lived and extremely toxic material absolutely must be designed to the worst case scenario, and the scenarios must be reasonably expected.~~

~~Consider an alternative to stabilize waste on the site where it is generated.~~

~~You must consider an alternative to encapsulate or otherwise stabilize the waste on-site where it is generated, thus driving to zero the risk to citizens and the natural environment along transportation routes and at Yucca Mountain.~~

~~There is inadequate consideration of the traditional basis of risk acceptance for all individuals exposed to risk. That is, for any additional dose above naturally-occurring background radiation, the individual recipient shall obtain a benefit greater than or commensurate with the added risk incurred, and shall have the option of refusing the additional dose. Specifically, the people who live in Clark and Nye Counties are being put at increased risk, with all the nuclear waste of the nation being funneled through our neighborhoods. What benefits are accrued to us? Are all the benefits accrued to other citizens of the United States? The risk is ours, and the benefits are theirs. Even if compensatory payments should be made to us and to people living along the transportation routes, how could such payments ever be commensurate with the risk of nuclear contamination? These risks are not something that we can discount lightly.~~

~~If the nuclear waste were isolated at the point of origin, the same people who benefited from the nuclear power would also bear the increased risk of radioactive exposure and nuclear contamination. This is consistent with the traditional basis of risk acceptance.~~

**alternate geologic disposal sites.**

ough you are not required to do so by law, you must consider alternate disposal sites, and you must consider alternate technologies to a geologic . This is the only way that any site selection will have credence.

**mental justice and public participation**

i documents must be translated into Spanish. You must provide translators at he public hearings, so citizens with primary languages other than English have ial opportunity to participate in the decision-making process. Copies of at least ecutive Summary must be made available in Braille so blind citizens have an tunity to participate.

must make solid outreach to the Native American population.

hearings themselves intimidate the public. The hearings involved an informal er session, with the only way one to submit oral comments is to huddle in a er with a court reporter. This process should be changed to include an open ment period during which the public can ask DOE questions and submit comments all to hear.

ally, confusion and mistrust abound in this process. Several of the recent hearings volved not only this proposed action but also the separate issue about the proposed ina corridor for the rail line. The NOI is full of vague references, jargon, and ncertainty. The public is left with little knowledge of the true meaning of the roposed action and the quality of the public comments will invariably suffer.

he fundamental purpose of the National Environmental Policy Act (NEPA) is to create transparent and open process that creates trust in the agency proposing an action nd one that allows for real, meaningful public involvement. This is unacceptable and ust be addressed immediately.

**specific complaint about this notice of public scoping.**

this latest notice of public scoping, we are incredibly concerned about the way you ve asked for public comment.

n October 24, 2006, seventeen (SEVENTEEN!) local, state, and national public trest groups, formally requested that DOE extend the comment period to 90 days allow more information sharing and to ultimately have more people comment. ese requests were not fully considered.

ly 15 days were added to the comment period (to total 60).

he first hearings in Washington D.C. and Amargosa Valley, Nevada took place only 1 nd 13 working days respectively after the NOI was published.

Two weeks is a completely inadequate time frame to allow the public to be sufficiently informed and to weigh in on the proposed changes, especially considering the magnitude of the proposed action. If you had *tried* to prevent the public from participating, you could not have done a better job of it.

**Conclusion:**

The new EIS has a large job to do. The health and well being of all Nevada, indeed, of the entire nation, rests on the outcome of this work. Your diligence and thoroughness will be called upon in challenging ways to provide the analysis that we all need to make a good decision, a decision that will affect unborn generations of people, and untold populations of animals and plants, for 10,000 years at least. Be very careful.

Sincerely,

  
Jane Feldman  
Conservation Chair