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To: EISR/YM/RWDOE
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Subject: EIS Comment

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The Commentors Name:

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---> position : Energy Program Coordinator

Comment Text :

--->February 28, 2000

Wendy Dixon, EIS Project Manager
Yucca Mountain Site Characterization Office
Office of Civilian Radioactive Waste Management
US Department of Energy
PO Box 30307, Mail Stop 010
North Las Vegas, Nevada 89036-0307

Dear Wendy:

Please accept these comments on the DEIS for the nuclear waste repository at Yucca Mountain.

- 1 [Clean Water Action Alliance of Minnesota has approximately 35,000 members in the state of Minnesota. We worked aggressively to prevent the storage of high-level nuclear waste outside of Northern States Power (NSP) Company's Prairie Island facility. We argued that it would be stored there permanently. While it is true that we didn't
- 2 want it there, it is there and we don't feel that at this time it should be moved. We have many concerns about several aspects of the Yucca Mountain Project. I did request a hearing on the EIS to be conducted in Minnesota, it was denied, although one of the drivers of the timeline for this project is the Prairie Island plant that is quickly running out of storage space. Below you will find our concerns about the Yucca Mountain EIS highlighted.]
- 3... Accessibility
[The DEIS constantly buries the reader in a jumble of confusing cross-references and redundancies. This obfuscation makes it difficult-if not impossible-for interested

3 cont. parties to navigate the three-volume report and to provide specific and clear comments to the DOE regarding the improvement of the DEIS.

Transportation

4 The DEIS should clearly and accurately characterize the risks involved along the transportation routes, and it should use the most current information available to do so. Further, it should include site-specific data to show the effects of accidents in highly populated areas or areas where it would be difficult to retrieve a leaking cask (such as ravines and rivers) or where accidents might be more likely because of extreme weather, steep inclines, or sharp curves. The DEIS should also note which mode of transportation the DOE prefers-rail or truck.

6 The DEIS fails to address the fact that the number of shipments and the amount of radioactive material that will be shipped is unprecedented in world history. About 90% of the volume would be spent fuel from nuclear power plants, and virtually none of this type of material has ever been shipped before. The DOE has posted the routes it used to complete the DEIS on its web site. This is a good start, but this information should be included in the DEIS. The DEIS should include both maps and tables showing the routes and number of shipments expected on each route, as well as where the waste shipped on each route will originate, and how many casks will be involved (especially for rail shipments).

Emergency Preparedness

8 The DEIS does not examine what emergency response personnel training and equipment would be needed in all of the communities along the transportation routes and what the specific impacts of a transportation accident would be. Many local communities lack the special equipment and training necessary to respond to a radiological accident. Further, many hospitals do not have isolation rooms for radioactively contaminated victims. This analysis should at least be done for the major population centers along the transportation routes (populations of 100,000 or more). The DEIS should indicate what emergency response equipment, facilities, and trained personnel are available in these communities, and what the effects of a transportation accident could be based on what is currently available.

Environmental Justice.

9 The DOE approached its environmental justice analysis by first reviewing the proposed action to see if it would likely result in high and adverse human health or environmental impacts to the general population, and then supposedly checking to see if any identified impacts would disproportionately affect specific minority or low-income communities. With this method, the DOE was unable to identify any environmental justice issues. It seems that in order to achieve true environmental justice, the DOE would need to identify all of the minority and low-income communities that could potentially be affected and then check to see if there would be any negative impacts to these communities that would be disproportionate to other communities.

Groundwater concerns

10 Since 1987 only one site has been under study as the final, permanent burial site for the nation's high-level nuclear waste. This material contains more than 95% of the radioactivity (not volume) in the dregs of the Nuclear Age. The vast majority of this material is from energy production at commercial nuclear power reactors. The repository program also includes high-level wastes from nuclear weapons production and the nuclear navy. Today there is no known solution for isolating this material for as long as it is hazardous - more than 250,000 years -- except for one year at a time.

It has been known since the early analysis of this site that fractures in the rock of Yucca Mountain will allow the release of radioactive gases over time as nuclear waste decays. The primary gas will be carbon-14. It is estimated that the release of this radioactive gas will have a global impact over time that will result in 25,000 additional cancers. This fact would have prevented the site from being licensed under EPA's nuclear waste repository standards coming into effect at that time. In 1992 Congress exempted Yucca Mountain from the EPA standard, telling them to write a special standard just for Yucca Mountain. The original standard (more or less) is on the books (though with a loop hole) for the embattled Waste Isolation Pilot Plant plutonium dump in New Mexico.

11 The Department of Energy's (DOE) own data as presented in the 1998 "Viability Assessment" shows that water moves quite rapidly through the rocks at Yucca Mountain. As soon as the containers begin to fail, radioactivity will also move rapidly - in centuries or less - to contaminate the ground water in the region. This is due to the same fractures in the rock that will allow the carbon-14 to escape.

Fingerprints demonstrating this fast flow pathway were left by fallout from the very industries that created the waste that would be sent to the site. Traces of chlorine-36 were found by DOE researchers deep in Yucca Mountain at the level where the waste would be dumped. This radionuclide is not found at these concentrations in nature.

In fact, there is only one bulk source of chlorine-36: atmospheric nuclear weapons tests conducted in the Pacific. Salt in the seawater was activated, forming the radioactive chlorine isotope. This "fell out" all over the Northern Hemisphere; it is not unique to Yucca Mountain. But its presence at repository depth proves that water has traveled there within the past 50 years, and proves a "fast flow" path for ground water travel.

Current DOE Site Suitability Guidelines state:

12 A site shall be disqualified if the pre-waste-emplacement ground-water travel time from the disturbed zone to the accessible environment is expected to be less than 1000 years along any pathway of likely and significant radionuclide travel. (960.4-2-1 Post-Closure Disqualifying Condition for Hydrology)

In November 1998, more than 200 environmental and public interest organizations sent a petition to the Secretary of Energy to disqualify Yucca Mountain as a nuclear waste dump since it clearly will fail to meet the Guidelines, and it will fail to isolate nuclear waste. Instead of acting on this petition, the DOE is in the process of trying to change the Site Suitability Guidelines.

Earthquakes & Lava

13 Why will Yucca Mountain fail to isolate nuclear waste? Why is it fractured? The answer is very simple. This area is as seismically active as the California Bay Area. There have been more than 600 earthquakes within a 50-mile radius of the site within the last 20 years. A major jolt knocked windows out of a DOE facility in the early 1990's. In 1998 and 1999 there have been a whole spate of tremblers, at a greater frequencies than previously observed.

All this shaking has fractured the relatively soft rock (tuff) that forms this low snaking ridge. There are 35 active fault lines in the area, including two that traverse the repository site itself, but the entire mass of Yucca is a sieve with tiny fractures that allow water and gas to flow.

A striking feature of the Yucca landscape is a line of lava cones that extends to the west of the Mountain. The youngest cone is closest to Yucca Mountain. This is clear evidence of the possibility of a magma pocket, which the earth's crust is moving slowly across. Like the formation of the Hawaiian Islands, these lava cones are like the squirts from a subterranean pastry bag.

Further evidence supporting the presence of a magma pocket comes from research published in Science magazine under contract with the US Nuclear Regulatory Commission. The use of global positioning satellites allows tracking of the movement of Earth's crust. The crust at Yucca is expanding. It is also moving westward at an accelerating rate. The authors conclude that this evidence is "consistent with" the presence of a magma pocket under Yucca Mountain.

The Western Shoshone People who have rightful claim to the land at Yucca Mountain have a different name for this site. It translates: "Serpent Swimming West." If we would listen to ancient wisdom, and pay attention to the earthquakes, we might be able to avert a major environmental catastrophe of burying nuclear waste where it will almost certainly leak.

Hot Water

14... Analysis of gas in crystals that are abundant inside Yucca Mountain shows that these crystals were formed by HOT water welling up into the mountain from below. This is more evidence of geothermal activity. If the nuclear waste dump were to flood with hot

- 14 cont. water from below, there is a distinct possibility of explosion - either caused by steam, chemical interaction or nuclear chain reaction.
- 15 The DEIS is an incomplete assessment of the environmental impacts associated with a nuclear waste repository at Yucca Mountain, Nevada, and as such, the DEIS should be withdrawn and completely rewritten. I look forward to your responses on my comments.

Sincerely,

Diana S. McKeown
Energy Program Coordinator
Clean Water Action Alliance
