Department of Energy Makes the Wrong Choice by Selecting Yucca Mountain

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Department of Energy Makes the Wrong Choice by Selecting Yucca Mountain, Nevada as a Suitable Nuclear Waste Repository, according to the Institute for Energy and Environmental Research

Takoma Park, Maryland, January 10, 2002: "The Department of Energy has made an historic error in declaring that Yucca Mountain, Nevada is a suitable site for a nuclear repository," said Dr. Arjun Makhijani, president of the Institute for Energy and Environmental Research (IEER), in Takoma Park, Maryland. "Put simply, it is the wrong choice."

IEER has long criticized the government's process of selecting and characterizing the repository as well as the problems with the repository itself. The government has changed the rules to accommodate the repository a number of times. Because Yucca Mountain could not meet rules for all other repositories, Congress asked the Environmental Protection Agency to make special rules for Yucca Mountain, for instance. Those rules exempted the site from meeting Safe Drinking Water standards for all water under federal land within more than 11 miles of the site. The Nuclear Regulatory Commission also changed its rules more than once to accommodate Yucca Mountain.

"Moving the goal post doesn't make for a better site," said Dr. Makhijani. "This is a site that even by the DOE's own estimates will do little to keep wastes from moving into drinking water. That whole job depends on a recently invented metal container that has had just a few years of testing."

The DOE plans to use a nickel-alloy container and a titanium drip shield as the principal engineered barriers to contain the water for thousands of years. But Yucca Mountain is an oxidizing environment in which metals could rust under certain circumstances, notably the presence of humidity.

"Putting a metal container in an oxidizing environment condemns one to fighting the second law of thermodynamics for eons. It is not a sensible approach from a basic science point of view. A metal container belongs in a reducing environment, not an oxidizing environment," said Dr. Makhijani. "When I pointed out this basic problem during a presentation to the National Research Council panel on Yucca Mountain last summer, none of the scientists on the panel challenged my assertion."

DOE has put all the eggs in the engineered-barrier basket, according to IEER. Normally, the barriers and the geologic medium should each be able to contain the waste on its own, thereby providing a back up. That is not the case with Yucca Mountain.

IEER has advocated a different approach to selecting a repository or disposal method. It involves studying a variety of different deep geologic media. Such an approach involves (i) selecting geologic

media that would retard waste and (ii) designing engineered barriers that mimic natural materials in those specific environments in retarding waste movement and in durability, and finally (iii) selecting a site where there is minimal risk of inadvertent human intrusion.

“There is no really good solution to the waste problem and its creation must be minimized,” said Dr. Makhijani. “But there are ways to handle the burden of waste that we have with scientific prudence and technical ingenuity. The selection of Yucca Mountain, unfortunately meets neither criterion.”

A considerable amount of literature on Yucca Mountain is available on IEER’s web site.

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