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Yucca Mountain Health and Safety Standards: No Expiration Date on Public Health

On July 9, 2004, the DC Circuit Court of Appeals ruled that the Environmental Protection Agency (EPA) illegally set a 10,000-year compliance period for radiation protection standards at the proposed high-level radioactive waste dump at Yucca Mountain, Nevada. Portions of the EPA standard, and the Nuclear Regulatory Commission licensing rule that implemented the 10,000-year compliance period, were voided.

What did Congress Mandate?

Congress mandated in the 1992 Energy Policy Act that EPA set public health and safety standards “based upon and consistent with” the findings and recommendations of the National Academy of Sciences (NAS). The NAS, which issued a study in 1995 on the scientific bases for public health and safety standards at Yucca Mountain, recommended “that compliance with the standard be measured at the time of peak risk, whenever it occurs.” The NAS found “no scientific basis for limiting the time period of the individual-risk standard to 10,000 years, or any other value.” Yet, EPA “unabashedly rejected NAS’s findings, and then went on to promulgate a dramatically different standard, one that the Academy had expressly rejected,” according to the Court ruling.

Compliance Period Is About Risk to Public Health

According a June 2005 study by the National Academy of Sciences, any amount of radiation will increase an individual’s risk for getting cancer. Given the geology and hydrology at Yucca Mountain, scientists agree that radioactivity would leak from the proposed dump and contaminate the drinking water aquifer below it. The debate centers on how fast the waste canisters will corrode and radioactivity will reach the groundwater. DOE’s projections show that the peak risk to an individual from leaking radioactivity would occur at about 300,000 years after closure of the site. The peak dose is estimated to be 37 to 150 times greater than permitted by the EPA’s groundwater protection standard.¹ The compliance period is set for calculation purposes only, and once the site is closed, the performance of the canisters and the geology will be what they are. The magnitude of the peak dose is what matters for public health, not when it occurs.

¹ The range reflects the uncertainty in the calculation.

Intergenerational Equity Is Foundation of Public Health Laws

Intergenerational equity—the principle that the health of future generations should be as protected as current generations—has been the foundation of U.S. and international public health and safety laws. In fact, the NAS concludes that “based on the performance assessment calculations provided to us, it appears that peak risks might occur tens to hundreds of thousands of years or even farther into the future.” Swiss regulations for its proposed high-level waste repository explicitly set no “expiration date” on protecting future generations.

Analysis Beyond 10,000 Years is Possible

In considering “whether scientifically justifiable analyses of repository behavior over many thousands of years in the future can be made,” the NAS concluded that “such analyses are possible...” The NAS recommended that the public health impact assessment should extend until the time when the highest risk is calculated to occur, “within the limits imposed by the long-term stability of the geologic environment at Yucca Mountain, which is on the order of one million years.” The NAS found “no technical basis for limiting the period of concern to a period that is short compared to the time of peak risk or the anticipated travel time.”

The Process Is Working

In August 2005, EPA released new draft rules in response to the Court’s decision and is currently reviewing public comments. The NAS recommended that “resolution of policy issues be done through a rulemaking process that allows opportunity for wide-ranging input from all interested parties.” Congress clearly directed EPA in the 1992 Energy Policy Act and there is no reason for Congress to weigh in again now. While there are numerous scientific and ethical problems with EPA’s draft rule, EPA should be allowed to conduct its review and issue its final rule without additional Congressional intervention.

**Limiting the compliance period to less than the time of peak risk threatens public health and safety for future generations.
There should be no “expiration date” placed on public health.**