Eureka County Public Works
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Ron Damele, Public Works Director

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EPA Docket Center (EPA/DC)
Air and Radiation Docket
Environmental Protection Agency
EPA West
Mail Code 6102T
1200 Pennsylvania Ave. NW
Washington DC 20460
Attention Docket ID No. OAR-2005-0083
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RE: EPA Proposed Rule 40 CFR Part 197 Public Health and Environmental Radiation Protection Standards for Yucca Mountain, NV

Eureka County, Nevada is an affected unit of local government under Section 116 of the Nuclear Waste Policy Act as amended. As part of the county's oversight responsibilities under Section 116, we have prepared comments on the above-referenced rule.

Eureka County is located in central Nevada, northeast of Yucca Mountain and the Nevada Test Site. Eureka County residents experienced exposure to fallout from above and underground nuclear weapons tests conducted by the federal government at the Nevada Test Site in the 1950's and 1960's. Although Eureka County is not down gradient from Yucca Mountain, we are concerned about the long term effects of radiation releases from the repository on our residents, the state, and the region.

Background

On July 9, 2004, the U.S. Court of Appeals for the District of Columbia Circuit vacated portions of the U.S. Environmental Protection Agency (EPA) Yucca Mountain Standard that addressed the period of time for which compliance must be demonstrated. The Court ruled that the 10,000 year time period for regulatory compliance was not "based upon and consistent with" the findings and recommendations of the National Academy of Sciences, and remanded that portion of the standard to EPA for revision. The Energy Policy Act of 1992 required that the EPA Yucca Mountain Standard be "based upon and consistent with" the findings and recommendations of the NAS.

The NAS recommended that the compliance assessment extend to the time of the maximum risk of radiation releases whenever they occur, as long as the characteristics of

the repository environment do not change significantly. The appropriate time scale, according to NAS, is on the order of one million years. Despite the NAS finding that there was no scientific basis to limit the compliance period to 10,000 years, or any other specific time value, the EPA limited the compliance time to 10,000 years. Thus the Court remanded that aspect of the Yucca Mountain safety standard.

EPA Proposed Rule

The EPA is proposing to retain, unchanged, the radiation exposure limit of 15 millirem per year using the mean to the Reasonably Maximally Exposed Individual for a period of 10,000 years. For the time period between 10,000 and one million years, EPA proposes to set the radiation exposure limit of 350 millirems per year using the median to the Reasonably Maximally Exposed Individual. The rule retains, for a period of 10,000 years, the Groundwater Protection Standard that limits exposure to an individual from drinking ground water to 4 millirems per year. For the period after 10,000 years, there is no groundwater protection standard. The 350 millirems per year dose limit from all sources to the Reasonably Maximally Exposed Individual is the sole individual protection standard.

Eureka County Participation

Eureka County submitted comments at the time EPA released its previous rule for public comment.

Eureka County attended the public meeting and hearing that EPA held in Las Vegas on October 4, 2005, and participated in the roundtable discussion with EPA officials. We appreciate that the agency extended the public comment period by 30 days, and note that the longer 180 day comment period requested by the State of Nevada would have been more appropriate given the complexity of the regulations and their long term effects.

Eureka County's comments on the proposed rule follow.

Writing the rule to fit the site

We believe that the revised proposed standard for releases between 10,000 years and a million years was written to ensure that the Yucca Mountain site will meet the standard. It's not the first time in the Yucca Mountain nuclear waste repository program that the rules were made to fit the site, to ensure that it will not be disqualified from consideration. We do not accept EPA's reasoning that a two tiered standard is necessary. The rule does not adequately explain why the 15 millirem per year standard for less than 10,000 years should not apply beyond 10,000 years. The rule also does not adequately address the fundamental challenge: to have a standard that is protective of public health and safety at the time of maximum releases into the environment. The rule should be written to protect public health and safety rather than to accommodate the many flaws in the site, and the site's inability to contain the radiation.

350 millirem rationale

EPA has explained that they derived the post 10,000 year radiation standard by choosing the background radiation of Colorado less the estimated background radiation in Amargosa Valley near the proposed repository. (700 mrem minus 350 mrem = 350 mrem.)

We find several flaws in this logic. The rule's explanation does not adequately explain why Colorado was chosen. The figures for background radiation for Amargosa Valley are not clearly documented. EPA is being arbitrary in choosing the background radiation for Colorado. It is our understanding that radon is a major contributing factor to that background radiation and thus is not similar to the Amargosa environment. In addition, just because a risk exists naturally in one location does not mean that it is acceptable or "safe" for humans to create it somewhere else.

Why choose the background radiation level for the area that will not be directly affected? Wouldn't it be more appropriate to use background radiation level for Nevada or for the nation as a whole? It appears to us that when it is to the advantage of the government to use site-specific standards, they are promulgated. But when site specific numbers are problematic for the repository to meet standards, then the government opts for generic standards.

There is a further flaw in the 350 millirem approach. EPA is using today's background radiation to set a standard well into the future. Since we know less about the future than the present, EPA should be assuming greater background radiation levels than exist today. In the past 60 years, radiation levels have been altered because of the actions of man and of government, such as the fallout and effects from nuclear weapons testing and nuclear materials both in the United States and other locations. The EPA rule assumes that background radiation levels will not change over the period from 10,000 years up to one million years. There are many speculative parts about making a rule to apply far into the future. One thing that should be clear to the EPA is that today's conditions cannot be assumed to be the same in 300,000 years or a million years. EPA should assume greater background radiation levels in the future than today, and the proposed standard should reflect these conservative assumptions.

Groundwater protection

The actual effect of this rule is that while the 350 millirems per year is "all pathways," the radiation will be in the water. When Yucca Mountain was under consideration along with eight other sites for the repository, the comparative analysis done at that time revealed that one of its major weaknesses is that the radioactivity could be in the water and would not be diluted so that it could direct effect humans, unlike radiation leaking into a large river where the effects would be greatly diluted.

EPA has not directly stated that the groundwater standard, which is 4 millirems per year prior to 10,000 years, will in effect jump to 350 millirems per year due to the nature of the site.

The proposed EPA rule should explain why 4 millirems per year is protective up to 10,000 years, and then 350 millirems per year is protective, from just after 10,000 years to one million years.

Comparison of doses

At the public meeting in Las Vegas, EPA provided some material to explain to the public the relationship of 350 millirems in relation to a chest x-ray, average dose from household radon, and other benchmarks. According to the EPA the least exposure is one (1) millirem per year, for people living near nuclear power plants. (See attached chart.) For years in Nevada we've been told that we have to accept the repository because it will be "safe" and that we have to assume the risk for the rest of the country because the waste isn't safe at nuclear power plants and communities are threatened. The chart provided by EPA indicates to us that one of the safest places to be is next to a nuclear power plant, which begs the question as to why it is necessary to transport this deadly waste to Nevada and expose current and future Nevadans to risks that are greater than those assumed by the rest of the country.

Median rather than mean

One significant change EPA is proposing is to use the median rather than the mean. The National Academy of Sciences recommended using the mean in their 1995 report which Congress asked EPA to use as guidance in developing the radiation rule. The NAS report states, "We recommend that the mean values of calculations be the basis for comparison with our recommended standards." (page 123) The result of calculating the 350 millirem/year standard using the median is that it is 70 times less stringent than the 15 millirem/year standard which is calculated using the mean.

The radiation rule will affect thousands of generations into the unknown future. We don't know the future, but the farther out in time we go, the more conservative we should be. EPA argues that because it is such a long time, a weak standard is better than none. We believe that because the future is unpredictable, it is important that the standard contain conservatism so that the repository system can be judged based on its ability to contain the waste in thousands of years. The way to do that is to adopt a standard that contains that conservatism. Revising the radiation standard by switching from the mean to the median is less conservative, is less protective, and is not acceptable.

Summary

EPA offers no convincing explanation of why a standard of 350 millirems per year, which EPA does not consider acceptable today or 10,000 years from now, should be considered acceptable after 10,000 years.

The EPA has proposed a standard that does not address the fundamental direction of the court. The NAS found that there is no scientific basis for a 10,000 year limit or any other time period for compliance. The NAS also found that in the face of uncertainty, the standard should be more protective rather than less.

Eureka County believes that the radiation standard should be reasonable and protective in the near and far term, and that the proposed standard does not accomplish that goal**.** In order ensure that the radiation standard is protective, EPA should extend the 15 millirems per year maximum exposure threshold together with the 4 millirem groundwater protection requirement to apply throughout the period of maximum projected releases for the Yucca Mountain facility. EPA should withdraw the proposed rule and issue a draft standard that is protective through the period of maximum projected releases at Yucca Mountain.

Thank you for considering the comments of Eureka County, Nevada.

Sincerely,

Ronald Damele
Public Works Director

Attachment: EPA chart