



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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ENFORCEMENT AND
COMPLIANCE ASSURANCE

Mr. John Hoyle
Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

DOCKET NUMBER
PROPOSED RULE PR 20 et al.
(59FR43200)

108

Attention: Docketing and Service Branch

Dear Mr. Hoyle:

In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Nuclear Regulatory Commission's (NRC) Final Generic Environmental Impact Statement (GEIS) in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities, NUREG-1496. The following comments are provided summarizing our concerns after many months of discussion with the NRC on the proposed rule.

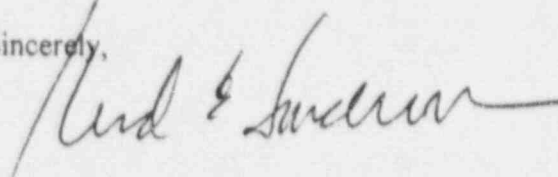
EPA remains in fundamental disagreement with NRC's choice of appropriate levels for clean-up of decommissioned NRC licensed facilities. EPA believes that clean-ups of radioactivity should ensure both that no member of the public receive greater than 15 millirem per year and that groundwater that is a current or potential future source of drinking water be protected to the Maximum Contaminant Levels (MCLs) found at 40 CFR Part 141. In contrast, as a result of the NRC cost benefit analysis, which we believe is in error, NRC has concluded that EPA's recommended clean-up levels are not cost-effective and concludes instead that a higher single all-pathways dose limit of 25 millirem per year is sufficient by itself without the need for a separate standard for ground water. EPA continues to believe, however, that a standard based solely on a multi-pathway dose limit does not ensure that ground water is cleaned-up within the aquifer, but instead could rely solely on exposure controls. NRC's standard is therefore not consonant with the EPA Administrator's position that current or potential sources of drinking water are a valued natural resource and should be protected to levels suitable for drinking. Specific comments detailing our concerns are enclosed for your review.

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Thank you for the opportunity to comment. If you have any questions concerning our comments, please contact John Karhnak in the Office of Radiation and Indoor Air at (202) 233-9280 or Susan Offerdal in the Office of Federal Activities at (202) 564-7158.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard E. Sanderson", written in a cursive style.

Richard E. Sanderson
Director
Office of Federal Activities

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cc: Ms. Kathleen McGinty, Chair, Council on Environmental Quality

**U.S. ENVIRONMENTAL PROTECTION AGENCY DETAILED COMMENTS ON THE
GENERIC ENVIRONMENTAL IMPACT STATEMENT IN SUPPORT OF
RULEMAKING ON RADIOLOGICAL CRITERIA FOR LICENSE TERMINATION OF
NRC-LICENSED NUCLEAR FACILITIES FINAL REPORT**

1. NRC over-estimated the cost of ground water clean-up.

NRC's analysis assumes costly groundwater remediation techniques will be used that have the maximum number of pumping wells. A more cost-effective scheme would be to perform targeted pumping of "hot spots." *NRC has mis-judged the cost of a separate groundwater standard that would comply with EPA's Maximum Contaminant Levels of 40 CFR Part 141.*

EPA provided NRC with specific comments on its ground water analysis on November 26, 1996, and offered to assist NRC with corrections to its analysis. That offer was not accepted, and the EPA comments were not implemented. As a result, the following comments, conveyed to NRC in the November letter remain valid:

- The analysis fails to acknowledge that no remediation is required if it is technically impractical. Pump and treat continues for 1,000 years for uranium and 286 years for strontium-90.
- The analysis only quantitatively analyzed two radionuclides, uranium and strontium-90.
- There is no mention of natural dispersion and dilution, and it is not clear if radioactive decay is included.
- All site-wide overhead costs are still added to the costs of cleanup (e.g., site health and safety) and thus appear to be double counted.

2. The procedure used by NRC for discounting costs of cleanups is unclear and could lead to over-estimating costs.

NRC needs to clarify that cost impacts are discounted, if they in fact were (e.g., one set of tables in Volume 2 indicate present-value costs were presented, but others do not). Further, it is possible that NRC over-estimated the costs of clean-ups by failing to consider that actual clean-ups will not begin for another 30 years, at the end of reactor life. For example, using the following assumptions: 1) a cleanup cost of \$1 million per year for five years, 2) a real discount rate of 7 percent per year, and 3) cleanup beginning in 1997 versus 2020, then the present-value cost for cleanup beginning in 1997 would be \$4.4 million and the present-value cost for the same cleanup beginning in 2020 would be \$0.9 million—a difference of more than a factor of four. Therefore, to evaluate the overall costs and benefits of the proposed regulation, it is crucial that the timing of cleanup be considered.

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If cost impacts were, in fact, discounted, then NRC needs to clarify what discount rate was used and the timing of the cleanup costs, i.e. when are the clean-up activities assumed to begin. Because NRC evaluated only generic reference sites, it is probable that they started discounting costs immediately (if indeed the costs are discounted at all). In reality, however, NRC sites affected by the proposed regulation will not incur costs until they decommission some time in the future. Therefore, if costs are being discounted assuming clean-up begins immediately, NRC's cost estimates could be significantly over-stated.

3. NRC has not properly estimated the costs imposed on the entire regulated community.

NRC has not estimated the costs imposed on the entire regulated community and instead has only estimated costs for single generic reference sites. NRC's four reference facilities have very different levels of contamination present. For example, the "power reactor" reference facility shows much higher incremental clean-up costs than does the "sealed source manufacturer" reference facility. However, the sealed source manufacturer facility represents a far greater number of actual sites than the much more costly power reactor facility. An estimate of the total costs for all types of reference sites would properly weight this large difference in number of actual sites. *Without this information, NRC may have mis-judged the total impact of this regulation and therefore also mis-judged the costs of complying with EPA's recommended clean-up levels.*

4. NRC did not judge regulatory impacts relative to baseline costs which represent existing practices.

Incremental impacts of the proposed regulation are not presented relative to a baseline case, but are instead judged by the costs of decontaminating a facility from a starting dose level to a second, lower dose level, i.e., 100 cleaned-up to 60 mrem/yr, from 60 down to 25 mrem/yr, 25 down to 15 mrem/yr, and from 15 down to 3 mrem/yr. EPA believes that comparing the costs of decontaminating a site starting from the levels currently allowed by NRC's regulations down to various levels of clean-up (e.g. baseline to 15 millirem, baseline to 10 millirem, etc.) would provide a far better basis for setting a clean-up standard.

5. NRC did not provide sufficient context and interpretation for the various cases evaluated.

Interpreting the meaning and relevance of the "future use" case -- office use, industrial use or residential use -- for the generic reference facilities is extremely difficult. Some cases (e.g., Case 1 and 2) were common among the four reference sites, but other cases were not. Little explanation was provided for why one case differed from another and how that difference should be interpreted, or why it was meaningful.

6. NRC provided no aggregate estimate of soil and structures cleanup impacts.

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NRC provided cost-benefit estimates of soils and structures separately. Because the proposed regulation will affect both soil and structures, their aggregate impact should be considered. Otherwise, it is not possible to evaluate, for a given reference site, the relative costs and benefits of alternative regulatory dose limits. Note that it is not clear from NRC's methodology whether or not it would be appropriate to simply aggregate the separate estimates for soil and structures to develop an aggregate estimate for each of the four reference sites.

7. There is uncertainty regarding survey costs applied to the reference sites.

In the Volume II appendix tables that illustrate cleanup cost elements by residual dose limit, the application of survey costs appear inconsistent. In Table B.1.4.1, for example, survey costs under the "none" level are \$0—indicating no survey costs in the absence of the proposed regulation. The survey costs increase to \$106,000 at 100 mrem/yr and 60 mrem/yr. At 30 mrem/yr, the survey costs drop to \$0. At 25 mrem/yr, the survey costs are again \$106,000. At 15 mrem/yr, survey costs increase to \$147,000 and then drop to \$0 at 10 mrem/yr. At 3 mrem/yr, the survey costs increase to \$961,000 and then drop to \$0 at 1 mrem/yr. It is highly unlikely that survey costs would ever be \$0—even at the "none" level and that survey costs would generally increase as the residual dose limit becomes more stringent. Given that survey costs are a significant component of the total cost of cleanup, this inconsistency could have important implications on NRC's interpretation of the GEIS results.

8. The analysis of reference sites does not appear to be realistic.

NRC appears to have simplified the reference site analysis in its revision of the GEIS. Thus, EPA's original comment regarding the need to expand the analysis to provide a more balanced picture still applies. On page 2-7 (Volume 1) the first full paragraph explains that NRC simplified the analysis of reference sites by consolidating the number considered for the GEIS. Relevant tables are attached showing the list of reference sites previously considered and those considered now.

9. NRC has not considered the potential costs to private citizens and public entities if contaminated plumes were to migrate off the licensed site.

There is no mention of the loss in land value because of a contaminated plume above MCL's being beneath or adjacent to the land of public citizens. There is no mention of the impact on public water systems that would have to treat ground water that meets NRC's 25 mrem cleanup limit but is above the MCLs. There is no mention of the costs associated with the homeowners need to use the replacement water instead of having the licensee treat the ground water to provide drinking water. There is no mention of state water programs and cost implications, such as complying with state mandated ground water protection programs or well head protection programs.

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