

Comments of
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to the
U.S. NUCLEAR REGULATORY COMMISSION

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Chairman Palladino and Members of the Commission, we are glad to have this opportunity to discuss our draft environmental standards for high-level waste disposal (40 CFR Part 191) and their relationship to the technical criteria proposed for incorporation into 10 CFR Part 60. Although our standards have not yet been released for publication, we expect to be able to propose them for public review and comment in the near future.

Part of our rule would establish overall performance requirements for high-level waste disposal systems--in terms of limits on releases of radioactivity to the environment for 10,000 years after disposal. We believe that these limits should provide very good long-term protection for disposal of high-level waste, and they should keep risks to future generations to a level no greater than the risks from equivalent amounts of unmined uranium ore.

However, we do not believe that our release limits provide an adequate regulatory framework by themselves. Disposal systems that meet our overall performance requirements will need to isolate high-level wastes for many thousands of years in spite of unplanned events and in spite of potential failures of parts of the disposal system. Compliance with these requirements will have to be judged through analytical projections of disposal system performance over a period far longer than any that has previously been considered in government regulations.

Because of the uncertainties inherent in applying these overall requirements, our proposal will also contain seven criteria that should be met to assure the needed confidence that our long-term release limits will be complied with. These criteria call for a cautious and "common-sense" approach to disposal that encourages use of disposal systems that are tolerant of some potential mistakes and unknowns.

One of these criteria calls for use of multiple barriers in disposal systems, with each barrier separately designed to provide substantial protection. This criterion is intended to compensate for unexpected failures of one or more of the barriers in a disposal system. Thus, the performance goals for each barrier should not merely be "optimized"--within the context of a properly functioning system--to meet our overall performance requirements. Instead, each barrier should be designed to provide as much protection as is reasonably achievable for that barrier, allowing for possible failures of other barriers.

We strongly support the approach taken in the proposed Part 60 to select specific performance requirements for the individual barriers of a geologic repository. It is the best way to achieve the cautious strategy we believe is essential, and it should prevent shortsighted designs for barriers that do not appear "critical" in the context of an overall system analysis. In fact, we have consistently urged the Commission to extend this approach to include specific performance requirements for site geochemistry and hydrology.

At the same time, selection of the performance requirements for individual barriers must include judgments about costs and feasibility. For instance, our comments on your proposed technical criteria questioned

the appropriateness of a 1,000-year requirement for containment within the waste package. Our assessments indicate that a 1,000-year waste package might cost a great deal without offering the extra long-term protection that enhanced performance of other barriers could provide--even when it is assumed that some of the repository's components do not perform as expected. In particular, we are concerned that the apparent severity of the waste package requirement may encourage attempts to compromise the overall approach of Part 60.

To reiterate, we support a specific numerical requirement for waste package lifetime, but a value other than 1,000 years may be appropriate. We are encouraged that the revisions to the proposed Part 60 would allow the Commission to pick a different requirement when more information, such as reliable cost data, becomes available. We also wish to point out that the other specific requirements in the proposed Part 60--particularly the requirement on waste form release rate--appear to be both appropriate and more important than the waste package requirement.

The approach of setting such specific numerical requirements on individual barriers of a repository--which is not within our authority--is an appropriate way for the Commission to implement our environmental standards. Furthermore, we believe this approach is essential for developing the confidence that will be needed in disposal systems that must work for so long, and we believe that the Commission should continue on this course.

Thank you. I will be glad to answer any questions you may have about these comments or about our draft environmental standards.