

October 11, 2001

Ms. Carol Hanlon
U.S. Department of Energy
Yucca Mountain Site Characterization Office (M/S #025)
P.O. Box 30307
North Las Vegas NV 89036-0307

Re: ANS Comments on the Yucca Mountain Preliminary Site Suitability Report

Dear Ms. Hanlon:

The American Nuclear Society (ANS), on behalf of its 11,000 members, is pleased to provide comments on the Yucca Mountain Preliminary Site Suitability Evaluation prepared by the Department of Energy (DOE/RW-0540). The ANS believes that the work performed to date by the Department of Energy, our national laboratories and other government agencies such as the US Geological Survey and the Environmental Protection Agency, is an impressive, comprehensive collection of interdisciplinary studies and reports that certainly provides a sufficient basis to conclude that the Yucca Mountain site is suitable for this nation's first geological repository. While there is more that can be learned about the natural and engineered features of the proposed repository system, and studies are ongoing, there is sufficient confidence based on existing knowledge to proceed to the next step in the siting of this repository.

The ANS recognizes that demonstrating the performance of a repository for over 10,000 years is a formidable task even for the best scientists and engineers. The approach that the department has taken, given the uncertainties in predicting performance over such long periods, is commendable, reasonable and scientifically sound. It has chosen a system performance analysis approach with extensive sensitivity analyses of key parameters that affect overall performance. It has also chosen to employ a number of engineered barriers in addition to the natural geological barrier that the Nevada Test site offers. All these steps support the overall finding of suitability.

The ANS believes that the Supplemental Science and Performance Analyses (SSPA) report (July 2001) is an important contribution in reaching the conclusion that the site is suitable. The results of the entire analysis show that the margins to Environmental Protection Agency standards are impressive allowing for significant confidence that the limits will not be exceeded. When compared to the much larger natural background and its variation in the area, the incremental dose due to the presence of the repository will likely not even be able to be measured.

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What is particularly significant and prudent is the decision to extend the closure time up to 300 years. The ANS believes that this extension, should it be necessary to substantiate the performance of the repository models, will provide the necessary technical and public confidence that the repository will perform as predicted. Should it not perform as predicted, appropriate technical improvements can be made or the spent fuel can be moved to another repository location. The safety of the underground repository during the first 300 years can be assured and as such it is a better place to store spent fuel than at reactor sites for such a long period. In addition, the retrievability option allows for decisions to be made by future generations should they decide that recycling the spent fuel is desirable, or that other uses of the radioisotopes are found.

The ANS believes that the Department of Energy should continue the siting process by submitting this report to the President with a strong recommendation that the Nuclear Regulatory Commission licensing process begin. Any remaining questions can be answered in the licensing process and during the operational phase of the repository prior to closure. Based on the studies conducted thus far and those continuing, it appears that the Department of Energy is prepared to address these questions.

In summary, the ANS believes that the Department of Energy has done a credible interdisciplinary analysis demonstrating suitability of the Yucca Mountain site for this nation's high level waste geological repository, creating the basis to proceed to the next step. This demonstration and the supporting analysis should be used to prepare a license application to the Nuclear Regulatory Commission for permission to construct and operate the repository.

The American Nuclear Society (ANS) is a professional organization of scientists and engineers devoted to the peaceful applications of nuclear science and technology. Our 11,000 members come from diverse technical disciplines ranging from physics and nuclear safety to operations and power, and from across the full spectrum of the national and international nuclear enterprise, including government, academia, research laboratories and private industry.

Attached are additional comments.

Sincerely yours,

James A. Lake, Ph.D.
Immediate Past President, American Nuclear Society