Subcommittee on Energy and Water Development
Committee on Appropriations
U.S. House of Representatives
March 9, 1992

Questions from Chairman Bevill

1 .Q. Since the 1987 amendment to the Nuclear Waste Policy Act, the Department has been pursuing the Yucca Mountain Site for the first repository. Does your review to date indicate that this site will not be satisfactory?

A. Response provided by Dr. Deere at Subcommittee hearing, March 9, 1992.

2.Q. As you know, the Department has experienced a great deal of opposition from the State of Nevada. Do you see activities that could be undertaken that would improve the Government's relationship with the State?

A. Unfortunately, the very nature of the relationship between the DOE and the state of Nevada, as it relates to the characterization of the Yucca Mountain site, presents difficulties for both sides under the best of circumstances. I believe the most important factor, in any situation of this kind, is to establish the good faith of the parties on either side of the issue.

In recognition of this principle, the Board has attempted to encourage the free exchange of ideas and to provide ample opportunity for comment among the various groups and individuals involved with the civilian radioactive waste management program. We seek to provide a fair and open process that recognizes and takes into consideration the various viewpoints of the affected parties. The Board believes this approach is crucial in helping increase confidence in our process as well as our conclusions and recommendations.

3.Q. From your perspective, what are the prospects for the Department to finish the construction and operation of a repository in the State of Nevada?

A. We will not be able to accurately address this question until the suitability of the site has been more closely evaluated through underground exploration of key geologic features inside the mountain. The Board thinks that the DOE should begin underground excavation promptly so that this evaluation process can begin.

4.Q. From your perspective, is the Department of Energy program being managed with technical competence?

A. At this point, our review indicates that the DOE's technical and scientific work is generally competent and that management of the program is becoming increasingly effective. The Board has stated that the DOE should place less emphasis on surface-based testing and more on underground exploration and the development of an engineered barrier system. Dr. John Bartlett, director of the OCRWM, has recently stated that he also favors beginning underground exploration as soon as possible and will give this top priority so that portal construction can begin in November 1993.

5.Q. Please describe how the members of the Nuclear Waste Technical Review Board are compensated.

A. Board members are compensated at the rate of level III, Executive Schedule as established by the Board's enabling legislation. This rate is currently $457 per day. Members are reimbursed for travel in accordance with the Federal Travel Regulations.

6.Q. Approximately how many days a year are the Board members employed in the activities of the Board?

A. The number of days worked by Board members on Board business during calendar year 1991 ranged from 56 to 104 days. Each of the nine members averaged 86 days for this period.

7.Q. How many of the authorized 10 professional staff positions are filled and how is their compensation fixed?

A. All but one of the authorized positions have been filled. Initial compensation levels are set by the Board Chairman after considering previous professional experience, education, and expertise. Later adjustments to pay are based on an evaluation of the individual's performance.

8.Q. You state that you will be heavily involved in a peer review process of DOE's technical and scientific activities. Please describe this process.

A. The Board, whose members represent a wide range of scientific and engineering disciplines related to nuclear waste management, is highly qualified to do the broad technical and scientific analysis of the program mandated by the NWPAA.

We obtain information on the DOE program in a variety of ways; from meetings with the DOE and its contractors, from review of the literature, by participating in field trips, and by attending symposia, workshops, and technical conferences. We also have looked at programs in other countries to enhance our perspective of the work being done here.

Early on, the Board organized itself into seven specialized panels that are set up to look at the individual program elements. These panels evaluate the issues and provide their recommendations to the full Board for its consideration. The approved recommendations are then included in a bi-annual report to Congress and the Secretary of Energy.

The Board is well-equipped to address many broad issues, and a number of more detailed issues, related to the program. However, with only eleven part-time members and limited staff, it is impossible to review in-depth all the details and the technical material produced by the OCRWM. Because of this, we have suggested at times that the DOE solicit the review and comments of peer panels composed of outside experts other than Board members for certain studies.

9.Q. Please describe a typical full Board meeting and the involvement of non-Board members.

A. Full Board meetings are usually devoted to the consideration of issues of general interest to the Board members. For example, on two occasions last year, and again this January, the Board invited Dr. Bartlett to provide an overview of budget allocations and program priorities for fiscal year 1992. At various times last year, the Board also invited presentations from the EPA and the NRC on the standard and regulations related to the program; from the GAO on potential problems with the program; and from representatives of the nuclear waste community, including public interest groups, the utilities, the state utility regulators, and the state of Nevada, on their perspectives of the program.

In October 1991, the Board sponsored a major meeting on the effects of elevated temperatures on the repository after emplacement of the waste. Decisions related to this issue cross the interests of the various Board panels and could have significant consequences for the program.

At each meeting, the individuals who have been asked to participate make presentations to the Board and then respond to questions from Board members. Following this, meeting attendees are invited to ask questions of the presenters or the Board members. The presentations, questions, and answers, are included in meeting transcripts, which are available through the Board library.

10.Q. Please describe a typical panel meeting and the involvement of non-Board members.

A. The Board's seven panels are composed of three to six members and are organized around topics such as hydrogeology and geochemistry; transportation and systems; and environment and public health. They provide a forum to allow the Board to analyze specific issues related to program elements.

The panel meetings are more specialized in content but generally follow a format similar to that of the full Board meetings. Presenters are selected according to their involvement with and knowledge of the topics to be discussed. An effort is made to include individuals and groups who represent diverse views and interests. All panel meeting proceedings are transcribed, and transcripts are available through the Board library.

In 1990, the Panels on Environment & Public Health and Transportation & Systems held three public hearings to solicit the views of interested parties on the transport of radioactive waste and the effects of site characterization and repository development on public health and the environment. Two of these hearings were held in Nevada. The third, on transportation issues, was held in Denver in an effort to facilitate access and participation by affected individuals and groups in the region. Transcripts of public hearings also are available through the Board library.

Question from the Honorable John T. Myers

1.Q. Are there any scientific reasons to disqualify the deep ocean sedimentary environment from further study as a potential repository while studies of land-based repositories proceed?

A. The 1987 amendments to the Nuclear Waste Policy Act directed the DOE to characterize Yucca Mountain as the sole site for possible repository development. The Board was created in the same legislation and mandated to review only the DOE's technical and scientific work related to this effort. Consequently, the consideration of alternative disposal concepts has not been evaluated or discussed by the Board.

As far as I know, the subseabed program funded by the federal government in the 1980's found that subseabed disposal of high-level nuclear waste should not be studied.

As we understand it, there may be some attractive technical aspects related to subseabed disposal. However, there also are some significant international and political obstacles that would have to be overcome if this alternative were to be fully developed.

Questions from the Honorable Joseph M. McDade

1 .Q. You have indicated in your testimony concerns about delays in the initiation of underground excavation and testing at Yucca Mountain.

Do you believe that the funds requested by DOE for the Exploratory Studies Facility are adequate to avoid slippage in the current repository development schedule?

A. On three occasions over the past year, the Board has asked Dr. Bartlett to brief us on the OCRWM budget. Not because we intended to do an audit, but because we have come to recognize that program priorities are affected by and reflected in budget allocation decisions.

The Board has been able to make some general observations based on Dr. Bartlett's presentations. First, it is clear that the Secretary's goals for the program - that is, receipt of spent fuel by 1998 and disposal by 2010 - have a substantial impact on program priorities. Second, *given the Secretary's schedule and OCRWM'sfocus on surface-based testing,* the DOE will need funding increases, over what it received in fiscal year 1992, to begin and continue underground exploration.

The Board does not know how much the DOE will need to characterize the Yucca Mountain site in time to submit a license application by 2001. Until the underground geology at the site is evaluated it will be very difficult to estimate what the overall costs of the program might be. The Board has strongly advocated getting underground faster than the DOE now plans so that we can begin evaluating as soon as possible whether Yucca Mountain is a suitable site. I would think that the insight we could gain in calculating total program costs would be another advantage of accelerating the schedule for underground exploration.

However, in answer to your question, I would say that considering the existing uncertainties - both technical and nontechnical - associated with site characterization and other aspects of the program, the schedule appears reasonable over the next few years. Given the present status of site characterization, there are significant uncertainties about the long-term schedule, some of which will be reduced as more information is collected.

2.Q. Please describe your specific concerns involving the engineered barrier system. What do you believe would be an appropriate level of commitment from the Department of Energy in support of EBS? How will EBS "substantially improve confidence in the long-term performance of a repository?"

A. The engineered barrier (EB) system comprises all engineered parts of the waste management system that are designed to prevent the release of radionuclides into the environment. It is the Board's view that well-engineered structures fabricated

under strict controls generally may be less variable and their properties more predictable than rock formations. We believe that the use of robust, long-lived engineered barriers, especially long-lived waste packages, may provide "defense in depth" when used in conjunction with a well-characterized, suitable site and may improve the confidence of the technical community as well as the public in the long-term performance of the repository.

The Board is concerned that inadequate and unpredictable funding will endanger the continuity of a rational, long-term experimental program required to develop an EB system. In order to meet the existing repository development schedule, we estimate that funding levels in the range of $10-15 million per year, over the next 10 years, would be necessary to develop an adequate range of design alternatives for a robust, long-lived waste package.

3.Q. When do you anticipate that the two unfilled Board member positions will be filled? How long have these positions been unfilled? Is there a particular area of expertise that is not currently represented on the Board based on these vacancies?

A. The Board is not directly involved in the nomination or appointment process. When Board vacancies arise, the Board notifies the National Academy of Sciences (NAS). Within approximately one month, the NAS forwards a slate of replacement candidates to the White House where the nominees undergo extensive screening, including FBI background checks and investigations of any potential conflicts of interest. This process is very time consuming and has generally taken from six months to one year to complete. Once this screening is concluded, the new Board member is selected and appointed by the President.

At full strength, the Board is composed of 11 members. There are currently two unfilled positions on the Board; a public policy expert and a radiobiology/health physics expert. One of these openings - in radiobiology/health - was created by the resignation of one of the Board members in August 1991. The public policy position has never been filled. We have been informed by the NAS that they forwarded nominations to the White House for these two positions some time ago. We hope to hear soon of the selection of the new members.