

REMARKS TO THE
NUCLEAR WASTE TECHNICAL REVIEW BOARD
STATUS OF THE CIVILIAN RADIOACTIVE WASTE
MANAGEMENT PROGRAM

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Chairman Cohon and Members of the Board:

Thank you for this opportunity to update the Board on the status of the Civilian Radioactive Waste Management Program. There have been a number of significant developments and milestones since the Board's meeting last May. Just prior to that meeting, Secretary Abraham initiated the formal site consideration process with the release of the *Yucca Mountain Science and Engineering Report*. In my remarks at that meeting, I noted that the Program would release several additional documents during the summer. We have since completed that effort. In July, we published Volumes 1 and 2 of the *Supplemental Science and Performance Analyses*. On August 21, 2001, we released the *Preliminary Site Suitability Evaluation*. With the release of the *Preliminary Site Suitability Evaluation*, the Department announced the schedule for public hearings in Nevada to receive comments on whether or not the Secretary should recommend the Yucca Mountain site. One public hearing was held here in Las Vegas last week. This hearing was video-conferenced simultaneously to hearing sites in Reno, Carson City, and Elko, Nevada, and broadcast live via the Internet to all interested parties. The hearing was also video-conferenced to the Senate, to allow members of Nevada's congressional delegation to contribute their views. Another hearing is scheduled for Wednesday in Amargosa Valley, Nevada, and the final hearing will be held on Thursday in Pahrump, Nevada. In addition to the schedule for the public hearings, on August 21, 2001, the Department announced that the ongoing public comment period, which began on May 4, 2001, would extend until September 20, 2001. Subsequently, on September 5, the Secretary extended the comment period an additional 15 days, until October 5, 2001. The comments received during these hearings, as well as those submitted in other forms, will be an important part of the site consideration process.

Over the next several months, the Secretary will carefully consider a large body of scientific information, as well as the views of the public, in deciding whether or not to recommend the site. While committed to making progress, the Secretary has also committed to ensuring that sound science governs each decision. The public's views on the validity of our work are important in any decision by the Secretary. To encourage public participation in that process, the Department has sent a letter to governmental officials and members of the public whose interest in commenting we had anticipated. This letter includes a list of suggested topics for public consideration regarding a possible site recommendation. The list is not intended to be comprehensive, nor is it intended to inhibit the public from commenting on any other relevant issue related to a possible recommendation of the site. The Department also published the letter in the Federal Register so that those members of

the public who do not receive the letter will have the opportunity to add their comments. Copies of this letter are available in the back of the room.

Addressing Board Concerns

Last year, the Board identified its priorities for improvements in our technical program. In response to the concerns of the Board, we completed a substantial body of technical work focused on the four areas that the Board recommended: (1) meaningful quantification of conservatisms and uncertainties in total system performance assessment; (2) progress in understanding the underlying fundamental processes enabling us to predict the rate of waste package corrosion; (3) further evaluation and comparisons of the base case repository design with a low-temperature design; and, (4) further development of additional lines of evidence supporting the safety case. The status of these efforts was presented at the Board's June Panel meeting. The feedback we received during that meeting is being strongly considered in the development of work plans for FY 2002 and beyond. We look forward to receiving further comments from the Board regarding its review of the documents that we published this summer.

Evaluation and Comparison of Repository Designs

The analyses supporting the *Yucca Mountain Science and Engineering Report* were based on a flexible design concept that would allow the drift wall temperatures to exceed boiling after closure. This design and associated analyses were used as the basis for the Analysis and Model Reports supporting the Total System Performance Assessment. Over the past several years, this Board and other peer review panels have raised questions regarding the quantification of uncertainties associated with coupled processes caused by the thermal pulse. Concerns have also been raised that certain corrosion processes may be accelerated at higher temperatures and that these processes could introduce additional uncertainties into the performance assessments. To respond to these concerns, we performed analyses to demonstrate the ability to operate the existing design concept over a range of temperatures by varying operational parameters such as ventilation, waste package capacity, and waste package spacing. By adjusting these parameters, the impact of the thermal pulse can be managed to maintain rock temperature and waste package temperature at levels that may reduce uncertainties.

While completing and reviewing these analyses, the Program has been evaluating options for a path forward with regard to the flexible design concept. The goal of this effort is to refine our approach towards developing a license application with sufficient technical basis while balancing broader programmatic constraints. These constraints include the schedule expectations for both submitting a license application and receiving waste, should the site be designated, and the limitations in available funds based on the level of likely appropriations as well as the time lag in the appropriation process.

We believe that the needs of the Nation may best be met by preserving the ability to select, from a broad thermal range, a design for repository licensing and initial operations. Preserving this ability, however, may require testing and analytical efforts to support production of licensing documentation for the lower end of the thermal range. This documentation would supplement the analysis for the upper end of the thermal range and the technical and programmatic information developed would be used to further support the lower end of the thermal range in a potential license application.

Accordingly, the Department has issued technical direction to Bechtel-SAIC Company, our Management and Operating Contractor, to begin evaluating this work in accordance with our project control processes so that the overall cost and schedule impacts of this effort can be fully understood. The Program's 2002 budget, which at this point is very uncertain, will strongly influence our ability to implement this work. We will evaluate these cost and schedule impacts in light of these broader program constraints and make appropriate management decisions regarding implementation of the technical work. We will keep the Board informed of our progress and decisions on this important topic.

Fiscal Year 2002 Budget

As noted above, the Program's Fiscal Year 2002 budget is a key concern. The President's Budget Request included \$444.9 million for Program activities in Fiscal Year 2002. Consistent with previous year funding levels, the budget request included \$2.5 million for the State of Nevada and \$5.9 million for the affected units of local government. Over the summer, both Houses of Congress considered the President's budget request and each has taken decidedly different action on the Program's budget. The House mark for the Program is \$443 million, a slight reduction from the President's request.

The Senate mark is \$275 million, which is far below the funding level needed to maintain the Program's schedule and any momentum toward fulfilling the Federal government's legal obligation to manage and dispose of spent nuclear fuel and high-level radioactive waste. The Senate mark is tempered, however, by a "manager's amendment" that contains a "Sense of the Senate" statement suggesting that a funding level more consistent with the Administration's request should be worked out in conference. A conference on the appropriation bill is expected later this month, and we look forward to resolution of this funding discrepancy. Should the actual appropriation reflect the Senate mark, the Site Recommendation would be in jeopardy, because technical work addressing the Board's and the Nuclear Regulatory Commission's concerns would be eliminated. We recognize that our commitments towards addressing these concerns are central to the Commission's views on the sufficiency of at-depth site characterization and the Board's views on the technical basis for decisions regarding repository development. The schedule for other key milestones, including the submittal of a license application and the receipt of waste, would also slip indefinitely while a new program is structured at a different funding level.

Repository Development Strategies

As we approach the Secretarial decision on whether or not to recommend the site, the Department and other organizations are evaluating refinements to the longstanding strategies for repository development should the site be approved. For example, during the National Research Council Board on Radioactive Waste Management's international workshop on geologic disposal, the concepts of reversibility and staged repository development received considerable attention. The term "*repository staging*" describes a process by which decisions concerning repository design, development, operation, and closure are made in a stepwise and potentially reversible fashion. A decision to proceed at each step in the process is made commensurate with the level of technical and policy understanding available at that time, and in a manner that allows for subsequent reversibility if warranted. The Department believes that this approach may have significant benefits, including the opportunity for continuous learning and improvement over the life of the Program.

The concepts involved in a repository staging strategy, however, are not well understood in an operational sense. To advance this understanding, the Department has contracted with the National Research Council for advice on design and operational strategies associated with the concept of a staged geologic repository. Last week, the National Research Council held a workshop in Washington, D.C. on this topic. We expect an interim report from the National Research Council in December and a final report next year.

In March 1996, this Board issued a report focused on the balance between storage and disposal of commercial spent fuel. The impetus for the report came, in part, from legislative proposals that would have effectively deferred the development of a repository in favor of a centralized interim storage facility, thereby shifting the national policy from permanent disposal to temporary storage. After reviewing two dozen technical and non-technical issues, the Board concluded that although there was no compelling technical reason for moving spent fuel to a centralized facility at that time, Federal storage capacity would be needed in this decade. The Board's report also emphasized the need for a balance between efforts aimed at permanent disposal and those associated with the timely acceptance of commercial spent fuel. The Board further recommended that consideration and development of spent fuel acceptance and storage capabilities await a decision on the suitability of the Yucca Mountain site. As the Board is aware, we are near that decision. Therefore, I expect a renewed debate on the strategy for developing the disposal facilities that balances the technical, programmatic, institutional, and fiscal requirements. I expect the Board to be a key participant in this debate along with other interested parties.

On a related subject, the Department has received a proposal for a study by the National Academy of Sciences that examines the long-term surface storage of civilian spent fuel and defense wastes. The Academy has proposed a careful analysis of the technical, institutional, economic, and policy dimensions of this complex issue. Should the Department fund this study, I expect that the Board's 1996 report will be considered along with the analysis in our Draft Environmental Impact Statement that evaluated the environmental impacts of perpetual surface storage of spent fuel.

Conclusion

The Department and the Board have met dozens of times over the past decade. Throughout those meetings, we described our plans for characterizing the Yucca Mountain site and evaluating its suitability for development as a repository. The Program has made considerable progress and has conducted a world-class investigative science program to determine whether the Yucca Mountain site is suitable. Despite enormous challenges, we have maintained the essential momentum to implement our Nation's policy for the management of spent nuclear fuel and high-level radioactive waste, and we have reached key decision points. We look forward to receiving public comments on our work and preparing the information necessary for a decision by the Secretary.

Throughout this process, the Board's constructive feedback on our activities has been instrumental to providing decision-makers with an independent perspective on the technical basis for decisions regarding geologic disposal. I believe the Board's recommendations have led to further strengthening of our technical program, especially toward influencing the evolutionary, stepwise design process. The stepwise development of a geologic repository, with design and operational flexibility and reversibility, coupled with continuous learning feedback loops, could be extremely important for a

program like this. Looking ahead, I believe stepwise development provides a societal approach for accommodating uncertainty in decision-making without foreclosing designs and operational approaches that could provide superior protection of the public health and safety and the environment. I encourage the Board to consider this critical issue in the coming year and look forward to its input into the decision process. Thank you. I would be pleased to answer any questions you may have.