Statement of

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Nuclear Waste Technical Review Board

before a joint hearing of the

Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives

and the

Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
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Chairman Sharp, Chairman Lehman, and members of the Subcommittees.

I am John Cantlon, Chairman of the Nuclear Waste Technical Review Board. With me today are two other Board members, Drs. Clarence Allen and Dennis Price. We are pleased to be here today at this joint hearing to discuss key issues of concern related to the civilian radioactive waste management program. I will provide a brief statement summarizing the findings of the Board's recent *Special Report to Congress and the Secretary of Energy,* and, with your permission, request that the full text of the Report — some 20 pages — be entered into the record.

As you know, the Board's congressional mandate is to review the activities undertaken by the DOE to evaluate the potential suitability of the site at Yucca Mountain, Nevada, for a permanent repository for the disposal of spent fuel and about 8,000 metric tons of high-level defense waste. Congress also charged the Board with evaluating the DOE's plans to package and transport the waste that would be disposed of at the repository. We are required to report our findings and recommendations twice a year to Congress and the Secretary of Energy.

Our first six reports dealt primarily with technical aspects of the DOE program. However, as our review has continued, it has become clear that in certain cases it is difficult to separate technical decisions from the policies that guide them. Consequently, in March of this year, the Board released a more broadly based *Special Report to Congress and the Secretary of Energy.* The Board's objective in writing a short special report was to make a timely and constructive contribution to the improvement and progress of the civilian radioactive waste management program. Indeed the Board made its recommendations at a time it hoped would be most useful to the Congress and the new Secretary. We would like to thank the Chairmen and members of the Subcommittees for providing us this opportunity to present the three major policy and management issues contained in the Board's report.

I will briefly summarize these issues in just a moment. But first, I want to emphasize that the Board believes there are many, very capable people working on this program. Also, based on currently available data, we see no technical reason for abandoning either the Yucca Mountain site or deep geologic disposal. Furthermore, the Board strongly believes that the concerns raised in our *Special Report* can and should be addressed without slowing the momentum of important site-characterization activities currently under way at Yucca Mountain. I also would like to point out that the Board's *Special Report* was released just as Secretary O'Leary assumed leadership of the DOE. Consequently, some of the issues raised may be addressed as the Secretary continues her review of the program. That said, I will briefly summarize the observations contained in our *Special Report* and outline the Board's recommendations.

First, the Board believes that it is highly unlikely that the DOE will meet the 1998 date for waste acceptance at an MRS or its 2010 deadline for beginning repository operations. The Board is concerned that attempting to meet these unrealistic deadlines

may cause the DOE to make important decisions without performing sufficient long-term testing and scientific analyses. This could cause licensing problems, increase overall program costs, and ultimately delay the program.

For example, in its fifth report, the Board stated that the DOE's baseline thermal-loading strategy lacked an adequate technical basis. This is especially important because the thermal-loading strategy selected may be fundamental to the performance of the repository and affects many aspects of waste disposal, including the size and design of the repository, ageing of the spent fuel, and the design of the waste package. The Board recommended that the DOE undertake a comprehensive evaluation of alternative thermal-loading strategies, and the M&O contractor has initiated some work in this area. However, the heater tests needed to support this important decision are not planned to begin until 1996. Several DOE contractors have commented to the Board that these tests could take up to a decade or more to complete. The Board is concerned that the DOE's repository development schedule may not allow sufficient time to complete these and other essential scientific tests.

Therefore, recognizing the need for a schedule to measure progress and maintain program momentum, the Board recommended that the DOE concentrate on establishing and meeting important intermediate goals — such as getting underground, determining site suitability, and completing essential scientific testing. Adopting this approach could help the DOE avoid costly errors, save money, and speed *real* program progress in the long run. It also could facilitate the licensing of the facility, should the site be found suitable. Secretary O'Leary has recently indicated that final deadlines will not compromise technical requirements. The Board welcomes this assurance and looks forward to seeing tangible evidence of such a policy.

The Board's second major concern relates to the DOE's overall plan for managing civilian spent fuel and defense high-level waste. Since it issued its first report, the Board has repeatedly recommended that the DOE approach the management of spent fuel and high-level waste as an integrated system that includes storage, transport, and disposal. Many advantages to this approach are enumerated in the Board's *Special Report.* Unfortunately, the DOE's current plan is not well integrated and contains significant gaps.

For example, even if the currently planned monitored retrievable storage facility and a repository are constructed and operating by the dates in the DOE's current optimistic schedule, substantial amounts of spent fuel will remain at utility reactor sites for decades. Despite this, the DOE's current plan does not consider the implications of extended at-reactor storage for other parts of the waste management system. In addition, the impact on the repository of the disposal of high-level defense waste and other high-level wastes has not been thoroughly evaluated and integrated into an overall program plan.

The DOE has recognized the existence of problems in this area, and in 1991 hired an M&O contractor to integrate the various activities and entities involved in the program. The M&O has made some progress in meeting this objective. However, the Board believes that more work on developing an overall system framework for the program is needed.

To that end, the Board recommended in its *Special Report* that the DOE place a high priority on developing a comprehensive, well-integrated plan for managing all the spent fuel and high-level waste that eventually may find its way into a permanent repository. Such a plan should take into consideration the interdependent nature of the system and subsystem components involved in storage, transport, and disposal of radioactive waste. Secretary O'Leary has recently called for the appointment of a chief scientist for the Yucca Mountain Project Office; this is one step that could improve the integration of site-characterization activities.

The third and final issue raised in the Board's *Special Report* focuses on the organizational structure and program management of the Office of Civilian Radioactive Waste Management. As I mentioned before, there are many, very capable people working on this program. However, the large number of organizations involved, the program's multilayered organizational structure, and the fact that the entities are geographically dispersed create substantial challenges for program managers. And responsibility for decision making seems to be shared among the people at headquarters, the project office, the M&O contractor and other private contractors, the national labs, and the U.S. Geological Survey. Furthermore, in the Board's view, the M&O contractor, which was hired to integrate the program, is not being used as effectively as it could be.

The Board also is concerned about the allocation of program funds. The very high overhead and infrastructure costs for the program leave limited amounts for actual site work and other important research and development.

In light of these concerns, the Board recommended that an independent evaluation of OCRWM's management and organizational structure be undertaken. By this we do *not* mean to suggest reconsidering the overall objectives or policies underlying the development of a deep geologic repository. I also would like to clarify that such an independent management evaluation would, by definition, *not* be an internal review conducted by the DOE.

The Board notes with interest that several issues raised in its *Special Report* — specifically the optimistic nature of the schedule, the risk of short-circuiting important scientific tests, and the relatively small amount of funding available for site-characterization activities — are quite consistent with the findings in the GAO report that also will be discussed today. However, there are differences in the bases for the findings in the two reports that are worth noting. For example, the conclusion in the GAO's report that site investigation may take 5-13 years longer than currently scheduled is based primarily on the GAO's evaluation of past and projected DOE program funding requests; whereas the Board arrived at its observation that the current schedule is unlikely to be

met by estimating the actual time that will be required to complete some critical scientific tests. Although we have said that adequate and predictable funding should be provided for the program, the Board believes that simply increasing program funding will not ensure that the DOE will meet its 1998 and 2010 deadlines. In addition, in making its observation about the limited availability of funding for site work and research and development, the Board considered only the impact of the Yucca Mountain project's infrastructure costs. The GAO considered in its calculations the funding requirements for transportation casks and siting a centralized monitored retrievable storage facility.

As pointed out in the GAO report, the funding priorities given to siting a monitored retrievable storage facility and transporting spent fuel to such a facility by 1998 have substantially shifted support away from activities related to repository development. This is an example of how decisions made about one component of the waste management program may have significant consequences for another part of the program. It also demonstrates the importance of resolving the policy issues associated with the acceptance of spent fuel. These difficult issues need to be addressed by Congress, the DOE, the utilities, and the other stakeholders.

Chairman Sharp and Chairman Lehman, in closing, I would like to emphasize that the job the Congress has given the DOE is important and necessary, but it also is difficult and complex. This is true not just because of the scientific and technical questions associated with the development of this first-of-a-kind geologic repository, but also because of the many political, institutional, and public acceptance considerations that are involved. However, the Board believes that without a strong and defensible scientific and technical underpinning the other challenges facing the program will be even more formidable.

We are all working toward the same objective — finding a safe and environmentally acceptable long-term option for managing the nation's spent fuel and high-level waste. The Board looks forward to continuing to play a role in this crucial national effort.

Thank you once again for allowing the Board to present its views. My colleagues and I will be happy to respond to any questions you may have.