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Statement of
Dr. B. John Garrick, Chairman
U.S. Nuclear Waste Technical Review Board
Before the
Subcommittee on the Federal Workforce and Agency Organization
Committee on Government Reform
U.S. House of Representatives
April 5, 2005

Good morning, Mr. Chairman and members of the subcommittee. I am John Garrick, Chairman of the U.S. Nuclear Waste Technical Review Board. All eleven members of the Board are appointed by the President and serve on a part-time basis. In my case, I am a private consultant specializing in the application of the risk sciences to complex technological systems in the space, defense, chemical, marine, and nuclear fields.

As you know, Mr. Chairman, the Board was created by Congress in the Nuclear Waste Policy Amendments Act of 1987 to perform an ongoing independent evaluation of the technical and scientific validity of the Department of Energy's (DOE) efforts in implementing the Nuclear Waste Policy Act. The Board began its work in 1989 and has continuously reviewed the technical and scientific validity of DOE activities since that time. I am pleased to represent the Board at this hearing.

According to the letter inviting the Board to participate, today's hearing has two purposes. The first purpose is to question whether federal employees falsified documents related to work at the Yucca Mountain site. The second purpose identified in the letter is to examine whether sound science exists for the proposed project, in light of the allegations.

Mr. Chairman, it would be inappropriate for the Board to draw any conclusions at this time about the significance for the technical work at Yucca Mountain of the group of redacted e-mails that were posted on the subcommittee's web site on Friday afternoon. Answers to questions that might be raised by or about the e-mails should await the completion of comprehensive investigations already underway at the Departments of Energy and Interior. The Board will follow the progress of those investigations, and when they are concluded, the Board will evaluate the significance of the results for the DOE's technical and scientific work. We will then report our findings to Congress and the Secretary of Energy. In the meantime, the Board will continue its ongoing technical and scientific peer review of DOE activities. The Nuclear Regulatory Commission (NRC) is the appropriate agency to address questions about the effects on the regulatory process of possible infractions of quality assurance procedures.

As you know, Mr. Chairman, reporting to Congress and the Secretary at least twice a year is an important part of the Board's mandate. In accordance with that mandate, in late 2004, the Board sent to Congress and the Secretary a report summarizing areas of progress in the Yucca Mountain program; issues that, in the Board's view, require additional attention; and the Board's priorities for 2005. Since the second purpose of this hearing touches on technical and scientific validity, I will now summarize some of the Board's findings from that letter report.

The Board believes that over the last year or so, the DOE has made progress in several areas. For example, a key corrosion issue raised by the Board was addressed by DOE data and analyses, indicating that tunnel conditions during the thermal pulse will likely not lead to the

initiation of localized corrosion of the waste packages due to deliquescence of calcium chloride. The Board also is encouraged by DOE efforts related to making earthquake ground-motion estimates more realistic and in completing an aeromagnetic survey that could shed light on igneous activity in the Yucca Mountain area. In addition, the DOE has made headway in developing a systematic approach to planning for the transportation of spent nuclear fuel and high-level radioactive waste.

Other issues require continued or additional attention, including an improved understanding and a clear explanation of the likely conditions inside repository tunnels during the thermal pulse; other corrosion issues related to the postclosure environment of the repository; the resolution of discrepancies among chlorine-36 studies; and improvements in the modeling of volcanic consequences. The Board also will follow with interest the work undertaken by the science and technology program established by Dr. Margaret Chu.

In addition to reviewing these important issues, the Board is establishing priorities for its technical and scientific review as the DOE prepares the information necessary to submit a license application to the NRC. In identifying its priorities, the Board considers (1) if the issue is important to the safe performance of the repository, (2) if the issue is important to public confidence, and (3) if the Board has special expertise and experience, which provide new and relevant perspectives on technical issues. In particular, the Board intends to review the DOE's technical and scientific work and analysis supporting total system performance assessment (TSPA). The Board will evaluate the extent to which the DOE has used TSPA as an integrative tool and how well the assumptions underlying TSPA results are supported by technical analysis

and available evidence. Other Board priorities include an improved understanding of the performance of the hydrogeologic barriers, particularly regarding the magnitude and timing of the peak dose; how the DOE's thermal-loading strategy might affect trade-offs between preclosure and postclosure risk; issues affecting the waste-package lifetime; and the DOE's continued efforts to develop an integrated waste management system, including the handling, transportation, packaging, and disposal of spent nuclear fuel and high-level radioactive waste. The Board is especially interested in scientific work and analyses that may be undertaken by the DOE in response to likely changes in the regulatory compliance period for a Yucca Mountain repository.

Mr. Chairman, let me close by saying that the Board looks forward to continuing its congressionally established role of performing an independent evaluation of the DOE's technical and scientific activities related to the disposal, packaging, and transportation of the country's spent nuclear fuel and high-level radioactive waste and reporting to Congress and the Secretary. We will be in a much better position to comment on the topics of this hearing once we have reviewed the findings of the comprehensive investigations that are currently underway.

Thank you for the opportunity to present the Board's views. I will be happy to respond to questions from the subcommittee.