

PRESENTATION 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 the opportunity to appear here today to provide my perspective on the status of the Civilian Radioactive Waste Management Program. I regret that I won't be able to stay for the entire meeting since I am scheduled to speak in California tomorrow. I will, however, be able to assist in any way I can during the public comment period tonight.

When I spoke to you in October, I noted that 1998 is an important year for the Program as we complete the viability assessment of Yucca Mountain as directed by the President and Congress. Completing the components of the viability assessment and the supporting documentation is a massive effort that requires the complete attention and focus of all our Program participants. We are on track and will deliver the viability assessment components to the Secretary this September. Dr. Russ Dyer, the Acting Project Manager for Yucca Mountain, will update you on the specific progress we have made following my talk. I will use my time on the agenda to discuss the broader policy setting and the significance of the viability assessment to the continuation of the geologic disposal program.

Before I address the geologic disposal program, I would like to note some important recent developments since our last meeting.

On October 30, 1997, the House passed a bill that calls for the development of an interim storage facility in Nevada. The Senate passed a bill last April with similar objectives although several provisions are different. A conference committee may meet sometime in the coming months to resolve the differences between the bills. The President has stated that he would veto either bill if presented in its current form. The outcome is uncertain, especially since there does not appear to be much legislative time on Congress' election year calendar.

On November 14, 1997, the United States Circuit Court of Appeals for the District of Columbia ruled that the delays clause in the standard contract provides a potentially adequate remedy to contract holders for the Department's failure to begin disposing of spent nuclear fuel by January 31, 1998. This decision denied a request by the petitioners for a writ of mandamus compelling the Department to begin disposing of fuel this month and authorization to escrow

fees. The court did issue a writ precluding the Department from excusing its failure to accept waste on the grounds that it had not yet established a permanent repository or an interim storage program. On December 29, 1997, the Department filed a Petition for Rehearing, asking the court to reconsider certain aspects of the ruling. In the meantime, the Department continues to explore approaches to resolving this issue in a manner fair and equitable to all parties. In another court case, decided on January 13, 1998, the U.S. 9th Circuit Court of Appeals upheld the Department's decision not to make Fiscal Year 1996 payments to the State of Nevada for oversight activities at Yucca Mountain. The court found that while the Department must provide oversight funds to Nevada, the State had sufficient funds available at the beginning of Fiscal Year 1996.

The President has emphasized the importance of geologic disposal to both the long-term management of commercial spent fuel and the clean up of the nuclear weapons complex now that the cold war is over. Geologic disposal also underpins our international non-proliferation policy and supports our national security objectives. Despite our recent accomplishments, the future of the geologic disposal program is uncertain. There are those who will clearly oppose geologic disposal and I expect that the viability assessment will be used by them to stop the Program. Some will claim that the environmental impacts and risks of a Yucca Mountain repository are too large and too uncertain, and that a new unknown course should be attempted. Others will call for abandoning the expensive repository, establishing a central interim storage facility, and relying on a major societal investment to expand into a future advanced technology of nuclear reprocessing and power generation.

Both of these arguments seek to reconsider the international consensus on geologic disposal and, in my opinion, are a step backward in the face of accumulating inventories of spent fuel, accelerated clean up of the nuclear weapons complex, and support for our international non-proliferation and national defense objectives.

The viability assessment will help Congress define the Nation's path forward for the long-term management of high-level radioactive waste and spent nuclear fuel. From the Program's perspective, the viability assessment components will objectively describe the design, performance, and cost of a Yucca Mountain repository based on the information collected to date. The assessment will also include a path forward for completing site characterization, and developing a site recommendation and a license application if continued investments in geologic disposal at Yucca Mountain are prudent.

The debate regarding the viability assessment and the continued pursuit of geologic disposal at Yucca Mountain is likely to be contentious and polarized. The views of informed, independent parties such as this Board and the Nuclear Regulatory Commission will be important to this debate. We want the viability assessment to be considered in the proper context. The information presented is not claimed to be sufficient for site recommendation or licensing. Uncertainties will remain. A focus on the details of information not yet fully

developed, however, may obscure the national issues and the substantial progress we have made and could undermine the continuation of the Program.

The costs and environmental impacts of a Yucca Mountain repository should not be judged in the abstract. These issues should be viewed within the context of the potential alternatives, including the no action alternative, based upon comparable analyses. There are no perfect solutions. All of us, as members of the international community, must provide an adequate, sound high-level radioactive waste management program in consideration of present and future generations.

I would also like to discuss your most recent report to Congress and the Secretary and the status of our related testing activities. We appreciate your recognition of the considerable progress we have made investigating Yucca Mountain. We share your enthusiasm for the well-integrated effort resulting in the timely completion of the drift scale heater test facility and the initiation of these important tests.

The construction of the starter tunnel for the cross drift is well underway and we expect to launch the tunnel boring machine in April 1998. Excavation is expected to be completed on schedule in September 1998. The testing phase will continue for several years after excavation is completed, however, visual observations and mapping will be completed as excavation proceeds. We understand the Board's desire to see the data collected from the enhanced characterization of the repository block initiative included in the viability assessment. We will ensure that observational information is considered to the extent practicable. The majority of the information will be considered for site recommendation and included in the license application. The significance of information obtained in subsequent testing and design activities, however, should not devalue the viability assessment. The viability assessment should help facilitate a general agreement between the Program and its regulators and overseers on the remaining work necessary to evaluate the site and complete a defensible license application.

We are also constructing an underground facility at Busted Butte in the Calico Hills rock unit to provide an analog similar to expected conditions within and below the potential repository horizon. Tests will be conducted to validate laboratory data and conceptual numerical transport models. This testing is intended to reduce uncertainties in Project scientists' assessment of the potential transport of key radionuclides from the repository area, through the unsaturated zone, to the water table underlying Yucca Mountain. Tests also will address the importance of colloid-facilitated transport of radionuclides, especially long-lived plutonium. Underground construction began in mid-December 1997 and is expected to be completed next month. Test bed construction and instrumentation are expected to be completed in late August 1998.

Concerning performance assessment, we recognize the importance of support from the scientific community at large. To ensure that our conclusions are based on state-of-the-art models and appropriate data, we are using an independent peer review panel for total system performance assessment. As you are aware, this panel presented its second interim report at a

public meeting earlier this month. Its final report will follow the viability assessment and influence how we proceed with the performance assessment for a license application.

Your recent report emphasizes the importance of both natural and engineered barriers to repository performance. We agree, and our analyses demonstrate that the performance of the engineered and natural barriers cannot be evaluated in isolation of one another. This philosophy supports our development of a robust waste package design, as well as enhanced engineered barriers, complemented by the natural environment.

You recommend that we should develop viable alternatives to the current reference repository and waste package design and that these alternatives should evolve over time as our understanding of the site and the interactions between the natural and engineered system further evolves. We agree that the repository and waste package designs should not be prematurely fixed and other potential options should not be foreclosed. At the same time, however, a workable reference design is essential for the viability assessment and the rational completion of site characterization. The Chairman of the Nuclear Regulatory Commission noted several years ago that the lack of a coherent design concept had been a source of discomfort for the Commission. We recognized this concern, and have developed a reference design concept for the repository system. This concept and an assessment of its performance provides the frame of reference required to evaluate the sufficiency of site characterization data and analyses.

Your recent letter suggests that alternatives beyond design add-on options should be addressed as cost-versus-performance choices in the viability assessment. Addressing design alternatives, different from design add-on options, will continue to be an important part of the overall design process. For the viability assessment, however, we believe that the feasibility of geologic disposal at Yucca Mountain is best addressed by focusing on a working design concept. This ensures that the components of the viability assessment rely on consistent information and the results are not biased by the selection or omission of particular alternatives, thereby obscuring the intent of the assessment.

We consider the design, however, to be a work in progress. We will further evaluate various design features and concepts following the viability assessment. We expect that design alternatives will continue to be evaluated throughout repository licensing, construction, and operation. Our design strategy recognizes the need for a workable reference design to support the development and review of a license application, as well as the reality that technological advances can be expected over the decades of repository operation. We are preserving flexibility to ensure that design features identified now, as well as those that emerge with advancements in technology, can be accommodated in the repository development process. To efficiently manage the Program, however, the minor modifications, as well as the major design changes, must be implemented through a formal design control process. Not only is formal design control a good management tool and required by our quality assurance program, it is an absolute requirement under Nuclear Regulatory Commission regulations.

Your recent report also mentions our efforts to enhance communication between the Program and the Board. During this challenging year, effective communications are essential to ensure that the Board fully understands the ongoing scientific work and, in particular, the viability assessment components. Given the significance and consequences of the Board's views, it is important to ensure that you have all the appropriate information on which to base your conclusions.

The focus of our work in science and design this year is directed at providing the necessary information for an open and transparent viability assessment. To demonstrate our commitment to openness, we will make the results of our world-class science and engineering studies available on the Internet soon after the release of the viability assessment.

One last point I would like to mention is our effort to streamline operations. Regrettably, the Program is proceeding to reduce the Headquarters staff by 22 positions in early 1998. Overall, the Program has significantly shifted the balance of staffing from Headquarters to Nevada, reducing Headquarters by 50% and increasing the Nevada staff by 40% since Fiscal Year 1992.

In conclusion, it is clear that the geologic disposal program faces a number of challenges this year. The Program is focused on completing the viability assessment as required by Congress and the President. The viability assessment will be a snapshot of the Project in mid-1998. It is intended to help identify additional work needed to make a site recommendation in 2001 and a license application in 2002. This milestone is important to the Nation's geologic disposal program and will represent the culmination of a significant effort by all Program participants. We intend that this assessment will provide an unbiased, technically sound, and state-of-the-art analysis of a potential repository at Yucca Mountain. We look forward to the Board's review of this effort.

Thank you for the opportunity to brief the Board today and I will be happy to answer any questions you may have.