

**Statement of
Lake H. Barrett, Acting Director
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
FY 2002 Appropriations Hearing
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Mr. Chairman and members of the Committee, I am Lake H. Barrett, Acting Director of the Department of Energy's Office of Civilian Radioactive Waste Management. I appreciate the opportunity to present our fiscal year 2002 budget request to you and discuss our plans for scientific and technical activities at the Yucca Mountain site in Nevada.

Our fiscal year 2002 budget request of \$444.9 million is devoted to advancing our Nation's policy for the long-term management of spent nuclear fuel and high-level radioactive waste. Based on the presumption that a potential decision to recommend the site for further development could be made, fiscal year 2002 would begin the transition from investigative science under the site characterization phase to engineering and design for the pre-licensing phase. Work during the fiscal year would focus mainly on preparing a license application for submittal to the Nuclear Regulatory Commission. The license application would contain surface and subsurface designs, including descriptions of operational parameters to meet the Commission's stringent technical licensing and Nuclear Quality Assurance requirements. During the transition, we would begin implementing performance confirmation work to verify and strengthen the scientific and technical basis for a potential repository. Also in FY 2002, we would begin the work necessary to develop the national infrastructure necessary to move spent nuclear fuel and high-level radioactive waste from their present locations.

BACKGROUND

The Civilian Radioactive Waste Management Program, particularly the ongoing scientific and technical work at Yucca Mountain, is the cornerstone of our national policy for the management of nuclear wastes. Permanent geologic disposal is essential for managing spent nuclear fuel from commercial electric power generation and nuclear waste from defense activities.

Commercial nuclear power plants that currently generate 20 percent of our nation's electricity will require permanent disposal of their spent nuclear fuel in a geologic repository. Past weapons production and research activities have accumulated over 2,500 metric tons of spent nuclear fuel. Thousands of high-level radioactive waste canisters will have been processed at Hanford and Savannah River. Our Navy's nuclear powered ships will have generated approximately 65 metric tons of spent nuclear fuel by 2035. From dismantling surplus weapons, our nation has amassed approximately 50 metric tons of weapons-usable plutonium. The nation will require disposition of these materials in a

geologic repository to maintain our energy options, support cleanup of our weapons sites, continue operations of our nuclear powered ships, and advance our international non-proliferation goals to isolate weapons material in a repository.

Since the enactment of the Nuclear Waste Policy Act in 1982, our nation has made a substantial investment in permanent geologic disposal. Almost \$4 billion has been committed to the scientific and technical work for a geologic repository. After nearly twenty years of cutting-edge science, our policymakers are very close to making a science-based decision on whether to proceed with further development of the Yucca Mountain site. Should the site be approved, we will continue with the step-wise process, outlined in the Nuclear Waste Policy Act, to develop a repository.

SUMMARY OF FY 2002 APPROPRIATION REQUEST

The Office of Civilian Radioactive Waste Management fiscal year 2002 budget request of \$444.9 million is an increase of \$44.6 million above fiscal year 2001 funding. This increase not only reflects our goal to reverse the over \$140 million in funding shortfalls incurred over the past four years, but also renews the Administration's commitment to address the waste management issue responsibly.

Our resources will be reallocated and applied towards accelerating our efforts – i.e., regaining some lost schedule – to submit a license application to the Nuclear Regulatory Commission in 2003. The Commission will consider information in the license application in its determination of how a repository at Yucca Mountain would protect human health and safety and the environment, based on the regulatory framework provided by the Environmental Protection Agency and the Commission.

Yucca Mountain: Of the \$444.9 million request, \$355.4 million, eighty percent, is targeted for activities at Yucca Mountain. Of these funds, more than sixty-five percent are devoted directly towards regaining momentum for license application activities, with particular emphasis on resuming and accelerating surface and subsurface Design and Engineering. To support a potential license application, Suitability, Licensing, and Performance Assessment activities will focus on resolving key technical issues identified by the Commission, and conducting and refining performance assessments of the surface and subsurface design features and operational modes, based on input from Core Science activities.

Core Science activities will continue to strengthen the underlying scientific and technical basis, which will be used to make an informed decision on whether to recommend Yucca Mountain for further development, and to verify and provide scientific data for licensing. These scientific activities will focus on understanding more fully how lower-temperature subsurface operational modes may reduce uncertainties in analyzing long-term repository performance. We also will seek to strengthen our performance analysis through our performance confirmation activities, which will provide independent lines of evidence for our analysis and performance models.

Waste Acceptance and Transportation: In fiscal year 2002, the Program is requesting \$5.9 million to fund activities that will support the transfer of spent nuclear fuel and high-level waste from its current owners to a federal facility and to begin revitalizing transportation logistical and institutional planning activities. Due to budgetary shortfalls during the past four years, these activities, especially transportation planning, were deferred while we focused our resources on investigative science for a possible decision on whether to recommend Yucca Mountain for development as a repository.

PERFORMANCE MEASURES

The fiscal year 2002 request is the start of funding levels that we need to meet our most critical performance measure -- maintaining the schedule to begin waste acceptance at a geologic repository by 2010. If there is a decision to proceed, the Program could then move forward with the process embodied in the Nuclear Waste Policy Act, as amended, by submitting a license application in 2003; obtaining Commission authorization -- as early as thirty-six months after submittal; and building the infrastructure to begin waste acceptance in 2010.

FY 2002 ACTIVITIES

I would now like to describe in more detail our fiscal year 2002 objectives and how this budget request will support our activities.

YUCCA MOUNTAIN

Fiscal year 2002 delineates a shift in focus to engineering and design activities necessary for a possible license application in 2003. The Program, under direction from language accompanying the 1997 Energy and Water Development appropriations, presented our plans, schedule, and estimated costs to license a repository in the 1998 Viability Assessment. If a decision is made to recommend the site, the Program will proceed to implement the general framework presented in the 1998 plan, supplemented by our greater understanding of how a potential repository within Yucca Mountain might perform.

Our budget request for Yucca Mountain is allocated under the following project elements: Core Science, Design and Engineering, Suitability, Licensing, and Performance Assessment, National Environmental Policy Act, Operations and Construction, and External Oversight and Payments-Equal-to-Taxes. The activities planned under each of these categories are described as follows.

Core Science:

This year's budget request of \$75.6 million represents a fifteen percent increase. Core Science activities include collecting data from the surface and subsurface; performing laboratory tests; monitoring and collecting environmental data; formulating scientific

hypotheses; modeling individual and combined natural processes; compiling scientific information for technical data bases; and writing scientific descriptions and analyses used to document results and findings. These efforts will proceed as a part of our performance confirmation program to strengthen the underlying scientific basis for a potential decision and provide multiple lines of evidence supporting the assumptions used in our engineering designs and performance assessments.

Design and Engineering:

The fiscal year 2002 request for Design and Engineering is \$104.4 million, an increase of 41 percent over last year. This substantial increase will allow us to resume engineering and design work to support a possible license application. This is work that we deferred while the Program focused on scientific and technical activities required for any possible decision on whether to proceed with repository development. The Program will vigorously continue repository surface design efforts to integrate new design concepts for accepting and handling defense high-level waste and spent fuel, and commercial spent fuel. The Program will analyze a modular surface and subsurface design and construction concept to evaluate how a step-wise, flexible repository system can integrate new technologies and new operational concepts as they become available.

The Program will refine the repository subsurface design and operating modes, including further analyzing the potential advantages of cooler repository operating temperatures and what effect they might have on reducing uncertainties associated with long-term performance. Engineering and design work will analyze fuel blending models that could enhance subsurface thermal management. We also will seek a greater understanding of long-term performance of waste package materials to strengthen our understanding of corrosion properties and the effects of manufacturing on waste package integrity.

Suitability, Licensing, And Performance Assessment

The fiscal year 2002 request for Suitability, Licensing, and Performance Assessment is \$84.9 million, a slight decrease of 1.2 percent. Although our request is lower in this area than fiscal year 2001, we have reallocated funds to specific activities supporting a possible license application. The bulk of our resources will be applied towards developing the preclosure safety analysis. This work was deferred while our investigative science focused on the post-closure long-term repository performance assessment required for a possible site recommendation decision. The results from this preclosure safety engineering analysis and the long-term post-closure performance assessments will provide the Commission in a licensing proceeding with a basis to determine whether a repository at Yucca Mountain can reasonably assure that public health and safety, and the environment would be protected during repository operations, and post-closure.

In parallel, we will further refine our repository total system performance assessments with information from continuing Core Science and Engineering and Design work to strengthen our understanding of long-term performance at cooler subsurface operating modes. Finally, significant resources will be applied to documenting license application

reports and underlying data into electronic media and web-based technologies for a license support network. We deferred these activities while we awaited a possible decision on whether to proceed with Yucca Mountain, but must address them to meet the Commission's requirements under 10 CFR Part 2, if the site is recommended and approved.

Operations and Construction:

The fiscal year 2002 request for Operations and Construction is \$35 million, a 10.7 percent increase. This modest increase is to build additional thermal test alcoves and niches in the potential repository block to gather performance confirmation data verifying drift scale thermal test results. The bulk of these funds would be used primarily to maintain the surface and subsurface infrastructure that supports Core Science.

National Environmental Policy Act (NEPA):

In fiscal year 2002, \$1.6 million, a 27 percent reduction, is requested for NEPA activities if the site is recommended. A final environmental impact statement will be completed and will accompany the documents supporting the comprehensive basis for a potential site recommendation. Afterwards, the administrative record compiled during preparation of the final environmental impact statement would be finalized, if the site is recommended.

External Oversight and Payments-Equal-to-Taxes (PETT):

The fiscal year 2002 budget requests \$19.7 million for External Oversight and Payments-Equal-to-Taxes. The Administration supports the State of Nevada and affected units of local government oversight activities - solely for independent review of ongoing scientific and technical work - as authorized by the Nuclear Waste Policy Act.

Our budget request also includes \$10 million to continue our cooperative agreement with the University and Community College System of Nevada. This agreement, initiated in fiscal year 1999, provides the public and the Yucca Mountain project with an independently derived body of scientific data, and fosters collaborative working relationships between government and academic researchers.

WASTE ACCEPTANCE, STORAGE, AND TRANSPORTATION

The primary responsibility of the Waste Acceptance, Storage, and Transportation Project is to develop processes for the physical transfer of spent nuclear fuel to the Federal Government. Because we were awaiting a decision on whether to proceed with the Yucca Mountain site, we deferred transportation logistical and institutional planning activities. However, if the site is recommended and approved, we must resume the preparations necessary to implement a transportation infrastructure to support the movement of spent nuclear fuel and high-level radioactive waste in 2010. For fiscal year 2002, we request \$5.9 million to begin long lead-time logistical and planning activities.

Transportation

For fiscal year 2002, we request \$3.1 million to begin and ramp-up activities that would develop the private sector-based national transportation capability necessary to move spent nuclear fuel and high-level waste beginning in 2010. This requires restarting the solicitation process for a draft request for proposals for waste acceptance and transportation services, with the goal of releasing a final request for proposals in late FY 2002. Other planning activities will consider transportation institutional issues within the State of Nevada, as the potential host state for a geologic repository, and will focus on resuming development of policies and procedures for the training of public safety officials as specified under the Nuclear Waste Policy Act, Section 180(c).

Waste Acceptance

For fiscal year 2002, \$2.3 million is requested to support modifying the Standard Disposal Contract to integrate private sector-based transportation services requirements. A significant part of our request will be applied to integrating waste acceptance criteria and schedules for the wide variety of fuel types from defense spent nuclear fuel and high-level waste owned by the Office of Environmental Management, Office of Fissile Materials Disposition, and Naval Nuclear Propulsion Program.

PROGRAM MANAGEMENT AND INTEGRATION

For fiscal year 2002, we request \$83.6 million for Program Management and Integration activities, a 10 percent increase above fiscal year 2001. The Program Management and Integration element oversees coordination between the Yucca Mountain Site Characterization Project and Waste Acceptance, Storage, and Transportation Project. The primary function is to ensure compliance with the statutory requirements of the Nuclear Waste Policy Act, and regulatory requirements imposed by the Nuclear Regulatory Commission, the Environmental Protection Agency, other Federal oversight groups, and Departmental reporting and accounting systems. Particular emphasis will be placed on ensuring that the Program meets Nuclear Regulatory Commission Nuclear Quality Assurance requirements as we accelerate our efforts to submit a possible license application in 2003.

FUTURE FUNDING CHALLENGES

Mr. Chairman and members of the Committee, I began my testimony by stating that our fiscal year 2002 request is based on the presumption that a potential decision to recommend the site for development could be made. If the Yucca Mountain Site is recommended and approved, the costs to license, build, and operate a waste management system will exceed past appropriations levels. Our Administration's budget request recognizes these future-funding challenges. The Administration in its budget states "support for efforts to use the nuclear utilities' budgetary receipts for [their] intended purposes."

The Program is looking at engineering, construction, and operational strategies for managing these potential annual costs that could occur after the 2002 timeframe. These strategies seek to distribute costs to level-out annual costs over the next ten years, using modular repository construction and operational approaches. In addition, the Program intends to submit a report on alternative means of financing and managing a federal repository to Congress in June 2001, as requested in the 2001 Energy and Water Development Conference Report.

LITIGATION

The Department is in litigation over the delay in meeting our contractual obligation to nuclear utility companies to begin accepting their spent fuel by January 31, 1998. The issue of waste acceptance is among our highest priorities. The Courts already determined that the federal government is liable to compensate utilities for additional costs they may have incurred due to the delay. We are now litigating what the source of funding should be and how much these costs will be.

INSPECTOR GENERAL INQUIRY

Last December, Secretary Richardson decided not to issue the Site Recommendation Consideration Report until the Inspector General investigated whether bias may have compromised the integrity of our work. The Inspector General performed a comprehensive and thorough evaluation of this issue and released his report on April 23. I was gratified that the Inspector General concluded there was no evidence to "substantiate the concern that bias compromised the integrity of the site evaluation process." I have told my staff that we must do even better. The report also identified several statements that the Inspector General concluded, "...could be viewed as suggesting a premature conclusion regarding the suitability of Yucca Mountain." We are well aware that we must perform our work without even the perception of possible bias.

Secretary Abraham, and I firmly believe and have communicated to all our employees, that it is Departmental policy, that all Federal, laboratory, and contractor employees must perform their work in a manner that reflects the integrity and objective approach necessary to conduct world-class science. We have reaffirmed our commitment to a site suitability evaluation process that is objective, unbiased, and based on sound science. We will continue to operate this Program in an open and transparent manner, worthy of public confidence and trust.

CONCLUDING REMARKS

The Department has made considerable progress and, despite enormous challenges, maintained the essential momentum to implement our Nation's policy for the management of spent nuclear fuel and high-level radioactive waste. We have conducted a world class investigative science program to determine whether the Yucca Mountain

site is suitable for further development. We have developed repository designs and operational concepts that would enable future generations to make decisions about a repository, providing them the flexibility to choose closure, indefinite monitoring, or retrieval of emplaced materials.

I believe that we are in a position to achieve important national and global decisions later this year. I urge you to consider favorably our appropriation request. Thank you. I would be pleased to answer any questions you may have.