

THE U.S. RADIOACTIVE WASTE MANAGEMENT PROGRAM: WORKING TOWARD A CLEANER ENVIRONMENT

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ABSTRACT

The U.S. radioactive waste management program is committed to developing a permanent solution to the Nation's accumulating spent fuel and high-level radioactive waste while protecting the safety and health of the public and the environment. The Department of Energy's (DOE) Office of Civilian Radioactive Waste Management (OCRWM) has made progress in moving the program forward through its dedication to timely completion of essential activities, achievement of professional excellence, and commitment to citizen's concerns and the national interest. By strictly adhering to these principles as expressed in the OCRWM Credo, OCRWM can build the public trust and credibility in the program needed to successfully develop a safe and effective solution to the high-level radioactive waste disposal problem.

INTRODUCTION

The Office of Civilian Radioactive Waste Management (OCRWM) is pleased to address the Waste Management '91 Symposium on the status of the Civilian Radioactive Waste Management Program. The success of the waste management program is critical to this country's ability to manage and permanently dispose of high-level radioactive waste and spent nuclear fuel and the reestablishment of confidence in the nuclear energy option for the United States. In keeping with the theme of this symposium, "Working Toward a Cleaner Environment," our recently-adopted Credo is the best vehicle I can use to illustrate our role in working toward a cleaner environment and to review what we are doing to move the program forward.

To guide us in our activities, we have developed an OCRWM Credo that expresses the primary goals and values that underlie our efforts. This Credo includes an expression of our commitment to being responsible stewards of the environment and to protecting health and safety of the public while executing our responsibilities to develop a permanent solution to the Nation's accumulating spent fuel and high-level radioactive waste. We firmly believe that by strictly adhering to this credo we will develop the public confidence necessary to complete our mission and thereby remove a serious obstacle to the use of nuclear energy in the future.

As indicated by the Credo, our foremost responsibility is protection of the environment and the health and safety of the public. The key, and virtually unique, feature of the U.S. program in comparison to others is our mission to act now -- as the Credo says, "to provide a timely solution for the ultimate management and disposal of high-level radioactive waste." This policy is embedded in the Nuclear Waste Policy Act of 1982, as amended, which set ambitious schedules and calls for dedicated effort. The underlying principle is to take responsibility for active management now and not to transfer responsibility to future generations.

The Credo is an active, living part of OCRWM strategy and operations and specifies our responsibility to provide timely completion of our assigned mission. This dedication to timely completion is exhibited in the following ways.

DEDICATION TO TIMELY COMPLETION

Resolve to Take Actions Necessary to Assure Progress at Yucca Mountain. The Department is conducting essential preparatory activities to be ready to begin new field work this year. However, there remains but one obstacle to our carrying out the mandate of the Congress and starting new testing at Yucca Mountain -- the unrelenting obstruction of the State of Nevada.

Nevada is still vigorously pursuing efforts to block DOE's scientific investigation of the Yucca Mountain site, refusing to act on the environmental permits required to perform site work. In a case heard by the U.S. Court of Appeals (Ninth Circuit) in August 1990, Nevada asserted that the failure of the Secretary of Energy to terminate site evaluation activities at Yucca Mountain is illegal in light of recently enacted State laws. Last September, the Ninth Circuit Court of Appeals handed down a unanimous decision in DOE's favor in that case. Nevada subsequently appealed that decision to the Supreme Court. We await the decision of the Supreme Court relating to the State of Nevada's petition for a writ of certiorari in that appeal. The Department also awaits the decision on its own motion for summary judgment in the DOE v. Nevada case regarding the issuance of the three permits needed to proceed with new work at Yucca Mountain. Although DOE refiled applications for those permits last year, the State has made no effort to process or issue them.

There are a minimum of 15 additional permits (State and Federal) that we will have to obtain during the course of site characterization. As it appears that the State of Nevada intends to litigate on each and every permit application, the program could be delayed for many years. As Secretary Watkins has previously stated, we believe that legislative action will be necessary to fulfill our Congress-

sional mandate and move forward to initiate new activities necessary to determine whether or not the Yucca Mountain investigation site is suitable for development as a repository.

Pursuit of Evaluation of Yucca Mountain Site Suitability as Soon as Possible. I am happy to say we are ready to begin new testing at Yucca Mountain. About two weeks ago, I conducted a "readiness review" at the Yucca Mountain Project. This past year, I have directed a number of activities to ensure that the program would have full readiness to initiate new site characterization activities. One such activity on which I have placed great emphasis is prioritizing our data acquisition strategy to ensure that we get the crucial information needed to determine as early in the site characterization process as possible whether the site is suitable or whether it is unsuitable.

Drawing from the very comprehensive site characterization program presented in the Site Characterization Plan for Yucca Mountain, we have identified those activities that should be conducted on a priority basis. Among these priority activities are trenching in Midway Valley to determine its stability and suitability for surface facilities, and deepening the existing Trench 14 to determine the age and origin of the controversial calcite silica deposits. To support such priority activities, we have completed all required study plans.

Additionally, prior to initiating any new site characterization activities, we must develop a quality assurance (QA) program meeting the requirements of the Nuclear Regulatory Commission (NRC) for that activity and must receive NRC's acceptance of that program. To ensure that our current operation is in conformance with the requirements of the NRC, we conducted QA audits of Headquarters and the Yucca Mountain Project Office in October of last year. Based on that audit, we requested NRC's acceptance of the OCRWM QA, and especially that portion related to new site characterization activities associated with Midway Valley Trenching and Trench 14 calcite silica studies. NRC has notified us that these portions of the program are acceptable. Nine of the project participants have also been audited and received conditional letters of acceptance. As a result of this acceptance, we have taken another step toward readiness to initiate new activities at Midway Valley and Trench 14.

We have also moved forward in the area of prototype testing and development to ensure that all necessary equipment, instruments, and procedures are available to conduct testing. This is often a crucial aspect of the program, remembering that many of the aspects of our extremely thorough testing program have never been tried or accomplished to this degree of exactness and replicability before. And in all of these areas, we have succeeded.

The Department is fully ready to begin new testing.

Integration of Program Activities and Support of Negotiator to Ensure 1998 Receipt of Spent Fuel. In conducting a multi-faceted project of such magnitude as the national high-level radioactive waste management program, many program elements are involved. It is extremely important that these separate activities be wholly integrated into one cohesive effort to assure the compatibility of the various parts. The Department has now signed a Management and Operating (M&O) contract with TRW Environmental Safety Systems for systems engineering, development, and management support of the high-level radioactive waste management system. One of the key functions of the M&O contractor will be to plan, monitor, and assure that this necessary coordination takes place.

Waste acceptance at a monitored retrievable storage (MRS) facility is an integral part of the Department's strategy, and DOE is aggressively pursuing its development. If the MRS facility can be sited in a timely manner, we still expect waste acceptance to commence in 1998. Upon initiation of repository operation by 2010, the fuel would be retrieved from storage and shipped to the repository. Support requested by Mr. David Leroy, the recently confirmed independent Nuclear Waste Negotiator, will be provided as he initiates his efforts to identify volunteer sites for an MRS facility. Such support will be given top priority.

DEDICATION TO PROFESSIONAL EXCELLENCE

Our Credo demands that we conduct our activities and ourselves according to the highest standards of integrity, openness, technical expertise, and professional excellence. Our dedication to professional excellence is exhibited in the following ways.

Reorganization of DOE and Contractors to Improve Management. In early November of last year, my reorganization of the Office of Civilian Radioactive Waste Management became effective. The new organization replaces the former matrix structure, which had been more generally geared toward site selection, and emphasizes lines of direct accountability that are focused on the characterization of a single site.

Implementation of the Management Systems Improvement Strategy to Assure Complete and Effective Compliance with Requirements. As part of the basis and planning for the reorganization, I have established the Management System Improvement Strategy (MSIS). The MSIS involves a rigorous, fundamentally new program approach that is based on systems engineering principles and analysis of both the waste management system and the organization responsible for its development. Its purpose is to improve management structure and procedure to introduce total control and traceability into the program, and to provide the basis for total program integration. The MSIS is being

implemented in increments consistent with progress in the development of individual system elements. This major effort is expected to be complete in FY 1992.

Full and Open Discussion of Technical Issues with the NRC, TRB, and Others. The Department's interactions with the NRC are very important. They include technical exchanges and meetings, monthly management meetings, bi-monthly quality assurance meetings, the quarterly meetings for scheduling future interactions, and meetings with the Advisory Committee on Nuclear Waste and the Center for Nuclear Waste Regulatory Analysis. These interactions are essential vehicles for exchanging technical information, providing feedback, and sharing concerns and priorities.

In addition to our interactions with NRC, we maintain an extensive dialogue with the Nuclear Waste Technical Review Board (TRB), the National Academy of Sciences, and others. These supporting interactions help to strengthen our work with NRC. The Department will do everything possible to ensure that the interactions in 1991 continue to be productive.

Participation in Technical Activities at the International Level. We are carrying out an international program in cooperation with several other nations. The purpose of this program is to actively pursue, implement, and successfully complete programs designed to provide information that will facilitate the development and licensing of the waste management system and promote international understanding and consensus in radioactive waste management issues.

Our international activities vary from monitoring efforts in other countries to active participation in cooperative, state-of-the-art underground testing projects. These diverse activities are directed toward acquiring and exchanging information and promoting international understanding and consensus on waste management issues. By integrating these international efforts within the entire OCRWM program, we benefit by developing transferable technology, expertise within the OCRWM program, and a broader experience base to use in formulating program policy and direction.

Diligent Pursuit of Full Compliance with All Environmental and Safety Protection Requirements. The Department intends to participate aggressively in regulatory framework development, that is, in participating in developing regulations, as appropriate, and dealing in particular with developing the means for compliance with regulations. This is a major area of concern for us as the regulated, and this is the area in which we can interact with NRC as the implementing agency to help develop and define what are the appropriate means of demonstrating compliance. The Department will act aggressively to identify areas where we think it is vitally important that we have action, and we will

work effectively and interactively with NRC and other parties to develop those means for demonstrating compliance.

DEDICATION TO CITIZENS' CONCERNS AND THE NATIONAL INTEREST

The OCRWM Credo expresses our responsiveness not only to our obligations as a Federal agency, but to the concerns of the public and the national interest. We are exhibiting this responsiveness in the following ways.

The Strategic Principles Workshop Series. The institutional challenges we face in implementing this program may prove to be the most significant as the need for a basic national consensus on spent-fuel management strategy will play a vital part in the overall success of the technical program. OCRWM seeks to implement the program with the full participation and cooperation of all stakeholders, and we will be seeking their active participation in shaping a sound Mission Plan Amendment that will represent -- to the greatest extent possible -- a broad consensus on the fundamental policies, strategic principles, and implementation plans that will guide the program.

Department policies and strategic principles will provide the framework for the mission implementation plan. These strategic principles will permit decisions to be made in a rational, goal-oriented manner directed at achieving the objectives of the program while allowing adequate opportunity for meaningful predecisional involvement by affected and interested parties. We believe that the effective participation of these parties in the development process is essential to the success of our program.

I have taken steps to increase the effectiveness of our external outreach and communication, especially with interested and affected parties. One example is the series of strategic principles workshops that are being held to receive predecisional input on ways in which we can best implement our mission. The first of these workshops was held in Salt Lake City, Utah, last December on the strategic principles related to ensuring public safety and protecting the environment; the second workshop, addressing those strategic principles related to the stewardship of resources and the effectiveness of operations, was held in Washington, D.C. in January; a third workshop will be held in the spring in Denver, Colorado, to provide feedback on OCRWM responses to the first and second workshops.

Now that we have this dialogue going, we want it to continue and will be searching for ways to make sure that it does. I feel that this strategic principles process is the key to building the strong national consensus on spent-fuel strategy so essential for the success of our technical program.

Efforts to Develop and Assure Accurately Informed Constituencies Through Publications, Speeches, Public

Update Meetings, and Open Houses. OCRWM interacts with a variety of organizations and individuals who have an interest in the program. The primary goals of our outreach programs are to provide opportunities for public involvement, to identify and thereby address public concerns, to provide complete and accurate information about the program, and to support long-term efforts for waste management education.

We remain optimistic that continued exchange of information and interactions with affected parties will eventually lead to a better understanding of and greater confidence in our program. We continue to encourage public participation in the planning and development of the waste management program and recognize it as essential to the success of the program.

Our Comprehensive Education Programs and Activities. Education is critical to the success of the waste management program and to the development of effective working relationships with external parties. OCRWM is developing educational programs aimed at improving science literacy and developing a keener awareness of science issues among the general population. There must be a long-term commitment to building a society that can make informed choices concerning energy and the environment.

In support of Admiral Watkins' initiatives to encourage science literacy and math and science education, we are enhancing our educational efforts. I have established the Education and Information Division within OCRWM to serve as the focal point for these activities. Current activities include educational programs for students from kindergarten through college and post-graduate levels, enhancing the skills of teachers, and encouraging careers in science and engineering.

The problem of radioactive waste management is both scientifically complex and deeply emotional. Managing our Nation's nuclear waste will span many decades, many generations, and even many centuries. Education is a precursor to public understanding and confidence and for preparing society to make waste management decisions that will protect the public health, safety, and environment. In addition,

the education system will provide the future workforce for nuclear waste management.

The OCRWM Education Program is committed to working with students, educators, universities, industry, State and local governments, and the general public in identifying and addressing scientific and environmental issues to promote public understanding. I have submitted to the Secretary an OCRWM Education Action Report, and we intend to build on the education activities and initiatives that are described in it by developing a comprehensive multiyear education action plan. We are seeking the input of the educational community in developing a multiyear educational strategy in support of activities under the Nuclear Waste Policy Act of 1982, as amended. In addition, we are actively working with other countries to develop education programs for building the skills and knowledge of our respective and collective future generations so that they can address, make sound decisions about, and manage and operate the systems for safe waste management.

Education is the key to public understanding and confidence in this complex and controversial program and, without this public understanding and confidence, we cannot hope to be successful in proceeding with the scientific programs.

CONCLUSION

Although we face serious technical, managerial, and institutional challenges in implementing this program, I firmly believe that we are making significant progress towards completing our crucial national mission. We continue to recognize our responsibilities for stewardship of the environment and are working in every dimension of the program to fulfill that duty. We firmly believe that by strictly adhering to the OCRWM Credo, we will build public trust and credibility in the program needed to complete our mission and to develop a safe and effective solution to the Nation's high-level waste disposal problem. In this way, we can remove a serious obstacle to the use of nuclear energy, thereby bringing us closer to the attainment of a cleaner environment.